The Last*

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CoEVOLUTION Quarterly

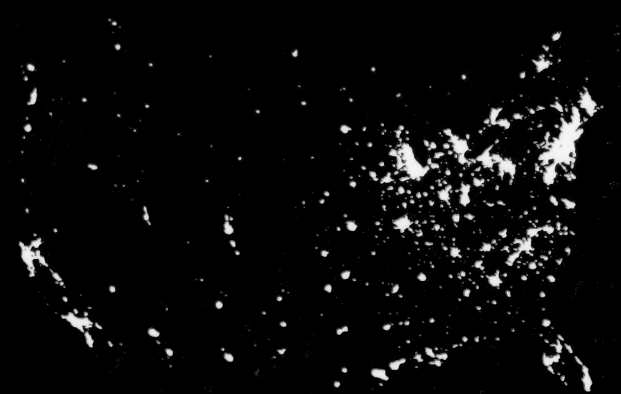
No. 43 Fall 1984

*Next issue is *Whole Earth Review:* livelier snake, new skin. See p. 142.

The Whole Earth At Night

Civilization's glow obscures its vision of the stars

More on back cover

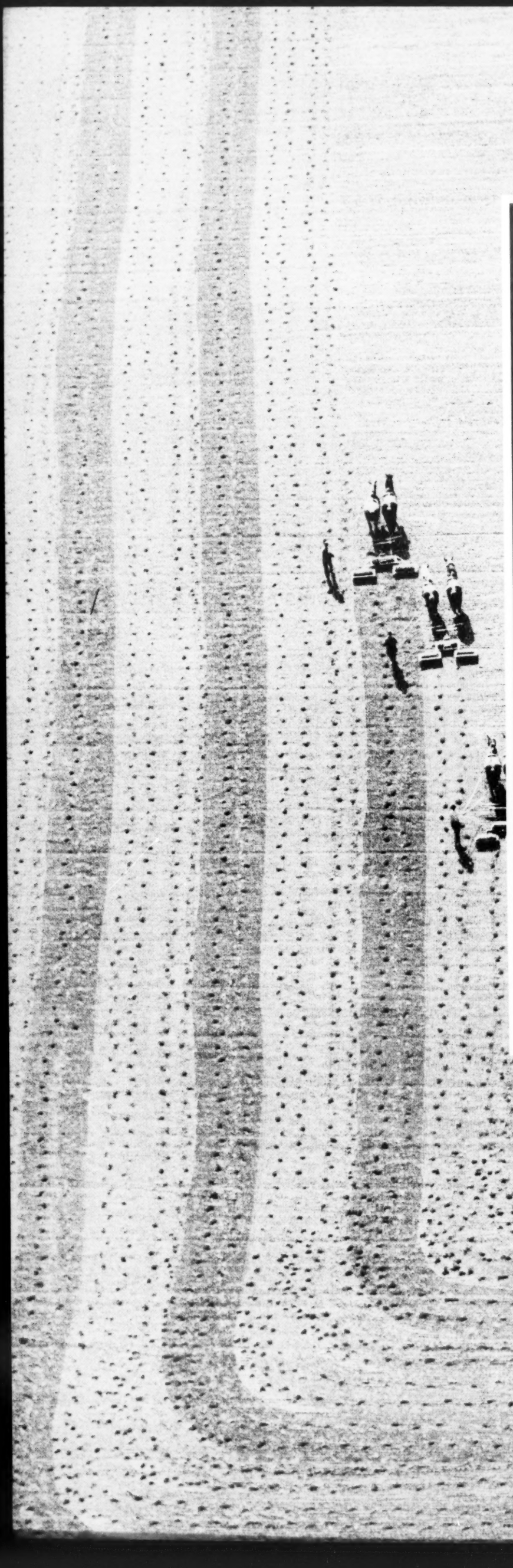


BECOMING PART OF GAIA

PLAYS WITHOUT ACTORS

LIFE AS STREAM OF CONSCIOUSNESS: ALZHEIMER'S DISEASE

Gary Snyder • Christopher Alexander • Sallie Tisdale



SONG OF THE TASTE

by Gary Snyder

Eating the living germs of grasses
Eating the ova of large birds

the fleshy sweetness packed
around the sperm of swaying trees

The muscles of the flanks and thighs of
soft-voiced cows
the bounce in the lamb's leap
the swish in the ox's tail

Eating roots grown swoll
inside the soil

Drawing on life of living
clustered points of light spun
out of space
hidden in the grape.

Eating each other's seed
eating
ah, each other.

Kissing the lover in the mouth of bread:
lip to lip.

from *Regarding Wave*

GRACE

by Gary Snyder

THE PRIMARY ETHICAL TEACHING of all times and places is "cause no unnecessary harm." The Hindus, Jains, and Buddhists use the Sanskrit term *ahimsa*, "non-harming." They commonly interpret this to mean "don't take life," with varying degrees of latitude allowed for special situations. In the eastern traditions "cause no unnecessary harm" is the precept behind vegetarianism.

Non-vegetarians too try to understand and practice the teaching of "non-harming." People who live entirely by hunting, such as the Eskimo, know that taking life is an act requiring a spirit of gratitude and care, and rigorous mindfulness. They say "all our food is souls." Plants are alive too. All of nature is a gift-exchange, a potluck banquet, and there is no death that is not somebody's food, no life that is not somebody's death.

Is this a flaw in the universe? A sign of a sullied condition of being? "Nature red in tooth and claw?" Some people read it this way, leading to a disgust with self, with humanity, and with life itself. They are on the wrong fork of the path. Otherworldly philosophies end up doing more damage to the planet (and human psyches) than the existential conditions they seek to transcend.

So again to the beginning. We all take life to live. Weston LaBarre says, "The first religion is to kill god and eat him," or her. The shimmering food-chain, food-web, is the scary, beautiful, condition of the biosphere. Non-harming must be understood as an approach to all of living and being, not just a one-dimensional moral injunction. Eating is truly a sacrament.

How to accomplish this? We can start by saying Grace. Grace is the first and last poem, the few words we say to clear our hearts and teach the children and welcome the guest, all at the same time. To say a good grace you must be conscious of what you're doing, not guilt-ridden and evasive. So we look at the nature of eggs, apples, and ox-tail ragout. What we see is plenitude, even excess, a great sexual exuberance. Millions of grains of grass-seed to become flour, millions of codfish fry that will never — and *must* never — grow to maturity: sacrifices to the food-chain. And if we eat meat it is the life, the bounce, the swish, that we eat, let us not deceive ourselves. Americans should know that cows stand up to their hocks in feed-lot manure waiting to be transported to their table, that virgin forests in the Amazon are clearcut to make pasture to raise beef for the American market. Even a root in the ground is a marvel of living chemistry, making sugars and flavors from earth, air, water.

Looking closer at this world of one-ness, we see all these beings as of our flesh, as our children, our lovers. We see ourselves too as an offering to the continuation of life.

This is strong stuff. Such truth is not easy. But hang on: if we eat each other, is it not a giant act of love we live within? Christ's blood and body becomes clear: The bread blesses you, as you bless it.

So at our house we say a Buddhist verse of Grace:

> We venerate the Three Treasures
> Buddha, Dharma, Sangha
> And are thankful for this meal
> The work of many people
> And the sharing of other forms of life.

Anyone can use a Grace from their tradition, if they have one, and infuse it with deeper feeling and understanding, or make up their own, from the heart. But saying Grace is not fashionable in much of America now, and often even when said is mechanical and flat, with no sense of the deep chasm that lies under the dining table. My poem "Song of the Taste" is a grace for graces, a model for anyone's thought, verse, song, on "the meal" that fortunate ones on earth partake of three times a day. ■

A well traveled poem, to the left. Commentary by its renowned author, right. Mindfulness, out front.

— *Kevin Kelly*

Photo by HANNS REICH VERLAG from *The World From Above*

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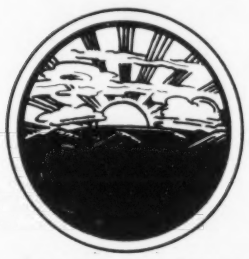
Becoming Part of Gaia



by Paul Krapfel *Illustrated by Rebecca Wilson*

ONE EVENING I saw the horizon rising towards the stationary sun. I felt the rotating planet rolling me smoothly back into its shadow. Before that night, I had always seen the "sunset." I'd seen our sun moving down behind the stationary horizon of an apparently fixed world. Though I knew that the earth spun, I did not see or feel it. The world I experienced was passive and immensely unmoving. But a simple shift in interpretation, from the horizon as stationary to the sun as stationary, caused the horizon and my frame of reference to tilt up in front of the sun. My unmoving world slid unrecoverably far away. Now each rising and setting sun and moon reminds me that I live upon a finite sphere within a vast space.

The Gaia Hypothesis of Lovelock and Margulis similarly transformed my world. I find myself in a world created and sustained by life. The more aware of Gaia's mechanisms I become, the more I see them creating much that I find beautiful. This inspires me to create beauty by imitating these mechanisms. It works. Meanwhile, this involvement uncovers other mechanisms used by Gaia. The process grows on itself. My world fills with reminders of her presence. My interactions become more refined and diverse. I find myself trying to become a conscious part of Gaia.

Gaia is an invitation to interact with the world. The power of the hypothesis is its openness to testing — duplicating Gaia's mechanisms to see what happens. This is what led me into soil erosion work. The invitation, unfortunately, is missing in Lovelock's presentation. He deals with atmospheric chemistry, an area of Gaia where personal experiments diffuse into insignificance. But the lack also stems from his approach. He creates a proof for Gaia's existence so powerful that it needs no reference to specific mechanisms. But without mechanisms to entice the reader, Gaia remains somewhat theoretical and aloof. I therefore offer this alternate view in the hope that, as Bateson pointed out, two perspectives on the same subject, like binocular vision, will create a third class of information independent of the two views.

To become a conscious part of Gaia, one first must be conscious of her presence. This is difficult, for her ways are wrapped in paradox. When wind buffets a tree, we readily see the wind's energy acting upon the tree. What we don't notice is the tree's energy acting upon the wind. For every action, there is an opposite and equal reaction. This equal reaction, however, is often not obvious. The wind-tossed tree is continually absorbing the wind's energy. The force of the wind is finite. By absorbing some of that energy, a tree diminishes the wind's energy. This might appear inconsequential with one tree, but if we stand in a forest during a windstorm, we hear the wind howling overhead while only feeling breezes around us. Life pries and wedges the atmosphere's turbulent energy away from the Earth's surface, allowing fragilely complex soil structures to develop over time. Even grass absorbs all wind energy close to the ground. If winds are allowed to touch the actual earth, as they did in the Dust Bowl, the foundation for life is swept away.

Another example is aquatic grass bent by flowing water. The influence of the water upon

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While we prepared this article, its author was unavailable — on an extended honeymoon. Paul Krapfel got back in time to say that he worked seven seasons as a conservationist in Navajo National Monument and now teaches in an alternative school near LA. He and his wife are looking for 50 badly eroded acres that would like a dedicated couple to attempt a two-decade restoration on it. *— Kevin Kelly*

the grass is apparent, while the influence of the grass upon the water is not. By growing and maintaining its position within a stream channel, the grass tremendously increases the surfaces the water must flow past. Frictional resistance is proportional to surface area. Because of the grass, more of the water's kinetic energy is used in overcoming resistance. Little power is left for erosion, so little occurs.

By absorbing some of the finite energy of flowing water or wind, life diminishes that energy. With less disruptive energy in the area, more life can emerge. This emerging life absorbs even more energy, allowing more life to emerge. So much energy will be absorbed, so buffered will the area become, that we may never realize the energy that flows there. This creates Gaia's first paradox. The more significantly life alters an area, the less significant life's role appears. The life-disrupting energy is so absorbed and diminished, so rarely allowed to express itself, that we forget it exists. We accept the buffered state as the normal state. Life then appears passive, an ornament adapted to its environment. But, in truth, life is in a very dynamic equilibrium with life-limiting energies. The current environment exists only because of constant maintenance by life.

The actual interactions between life and these energies are fascinatingly diverse. The emergence of more life in the stream channel, for example, reduces stream velocity. The slowing waters must drop their silt load. They also carry away less decaying plant material. Both these effects increase channel deposition, which creates more soil and nutrients for plant roots. Plants grow stronger, denser. This reduces velocity further, creating more deposition. Deposition displaces water. The stream overflows and spreads out, greatly expanding the surface area it flows over. The water's energy drops drastically. Nourishing water and silt are spread over a broad channel, nourishing more lush growth. This growth creates greater accumulations of spongy, absorbent, decaying plant material, spreading the slowing water ever wider.

Another example of diverse interactions occurs on windy, high ridges. The wind creates several limiting factors. It creates a drought-stressed environment. Moving air sucks the moisture out of a plant far faster than still air. The wind also blows winter snow, major source of summer moisture, off the ridge. It blows away the soil that can hold that moisture, leaving only thin, rocky soil. Wind-blasted snow crystals and sand also scour plants, wearing them down. Finally, the convective wind prevents an area from basking in the sun. Absorbed heat is dispersed and surfaces remain cool.

The wind swirls and eddies across the ridge, so that in some places its energy is not great enough to prevent life's occurrence. In the windshelter of rock or hollow, life gains footholds. By surviving there, though, life alters the equilibrium. Lichens and mosses are full of wind-baffled spaces in which blowing soil or snow will lodge. This aids the next generation in growing taller and thicker, enabling them to trap even more soil and moist snow. As better-nourished plants grow taller, they shelter more area downwind. Life expands a bit in that direction. This larger area attracts more insects which defecate and die, adding nutrients to this growing island. With each expansion, more snow, more soil accumulates.

When wind buffets a tree, what we don't notice is the tree's energy acting upon the wind.

As plants grow taller or denser, the wind touches life at the heart of the windshelter less. Plants there experience less dessication. Heat accumulates. The heart of the shelter can now support woody plants which stand against the wind; the windshelter expands.

These interactions illustrate Gaia's second strategy. Several energies resist life's expansion. The balance between these energies and life's energy creates an equilibrium. But if life can expand against one of the energies just a bit, it diminishes that energy. The smallness of such changes is the heart of this strategy because small changes don't induce strong reactions. Each small change that can be maintained allows a new equilibrium to evolve. The new equilibrium can arise in different ways. More life might emerge and share the work so that the disruptive energy is now more easily absorbed. Or the environment might change, such as in the example of channel deposition, so that the disruptive energy diminishes. The new equilibrium adjusts the balance of energies in life's favor. This allows

life to gather more strength and perhaps expand a bit against another limiting energy. (The larger windshelter, for example, allows temperature to rise, permitting faster growth.)

This strategy allows generations of "insignificant" plants to create significant changes. Each small shift in equilibrium enables another small shift. The situation never departs far from equilibrium and yet the situation changes greatly over time. But again, paradoxically, this strategy of small changes makes the changes invisible. Each new equilibrium covers the tracks of the previous change. All we see are seemingly inconsequential changes. The power lies in the accumulative

Each small change that can be maintained allows a new equilibrium to evolve.

consistency with which these changes shift the equilibrium in life's favor.

The third paradox of Gaia's power is that its very vastness makes it invisible. Gaia's energy is that of all living things. Innumerable lives (billions of bacteria in a spoonful of soil) wield tremendous energy but the energy is spread so evenly as to be invisible. There are no sharp contrasts, no concentrated points of intense energy to catch our attention. We can directly observe only an infinitesimal amount of Gaia's power. To comprehend her power, we must somehow sum the seemingly trivial effects of life over the entire surface of the earth. We must see how the small but consistent effects of innumerable plants and animals create significant shifts in global equilibriums.

What is the global consequence, for example, of life slowing the flow of water? We've seen how grass in a channel slows water down. The effect is even stronger above the channels on the slopes, where 99 percent of the precipitation falls. Vegetation absorbs the rain's impact. The drops slide down to a soil kept porous by roots, worms, and rodents. Most of the water sinks in. This subsurface water percolates slowly through an intricate gauntlet of roots which absorb the moisture and transport it to the large transpiration surfaces of the leaves. Much of the water rises back to the sky to fall again; only a portion reaches a stream. The stream's volume is low; so, too, is the velocity. The water flows slowly back towards the sea. Fallen trees and beaver dams, grasses and cattails slow it further. Animals drink and walk away upslope. Billions of emerging insects carry minute amounts of moisture away within them. Cottonwoods and willows line the stream and copiously transpire water to the sky.

Only eleven inches of moisture a year, on the average, come from the sea, yet twenty-nine inches, on average, fall on the land. This is because the precious gift from the sea is recycled and used again. The average raindrop falls, evaporates, falls again, evaporates again, and falls one more time before finally returning to the sea. Each time it falls, it nourishes life.

Contrast this with the earth 400 million years ago when life had not yet colonized the land. There are no plants, no soil. Bedrock and weathered rock absorb very little rainfall. Virtually all of it runs off instantly. Enormous volumes of runoff quickly achieve velocities which are limited only by the water's own turbulence. Within days, almost all the water has raced back to the sea, participating in one fast cycle. The only recycling on land comes from wet rock surfaces and occasional pools. Whatever rain wets the earth comes directly from the ocean. If only eleven inches cycles from the ocean (as today), then little more would fall on land — nearly desert conditions.

Four hundred million years later, twenty-nine inches of rain fall, enough to support forests. The double recycling that achieves this is due largely to life's reduction of run-off velocity and life's enormous transpirative surface. Life "creates" eighteen inches of moisture, converting a severely limited resource into a more abundant one. In a beautiful co-evolution, life creates more rain which creates more life which creates more rain.

A more speculative example of Gaia's presence is created by coral or kelp and barnacles, the shore-enshrouding life. Wave energy is very powerful and constant. But before smashing against bedrock, the waves must first pass through a zone of life — life especially adapted to withstand the waves' powerful force. Kelp moves with the waves' rhythm — and the waves expend energy in moving them. The finite energy of the waves is diminished. This allows barnacles to survive more easily

and shields more bedrock from the smashing, abrading surf. The waves erode the shore less.

Land is a balance between uplift and erosion. If land rises above the sea faster than it is worn down, new territory forms. If land erodes faster than it rises, territory diminishes. Life, whether as kelp in the sea or grass on the hills, hinders erosion. Life's reduction of erosion shifts the balance towards land formation. Terrestrial and tidal life increase land — a limited resource essential for them.

More complex interactions might exist. The rate of uplift is a balance between tectonic forces and the resisting weight of the overlying rock. Because of life's clinging presence, the overlying rock is not carried away so fast. Uplifting forces encounter greater resistance than they did 400 million years ago. Life conceivably influences tectonic forces deep within the earth. They cannot act and dissipate so "quickly." Thus, this energy that creates land is conserved by the life that needs the land.

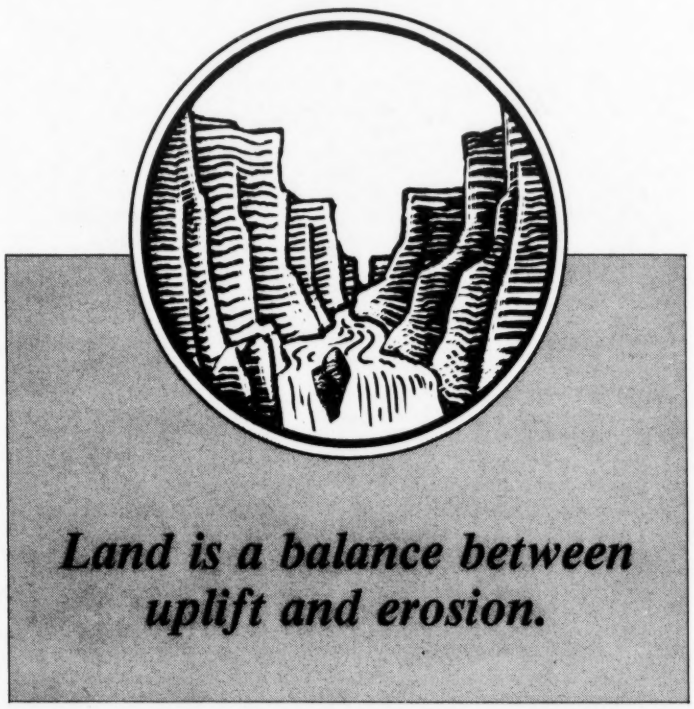
Such interactions between life and its environment are loops of positive feedback. Life creates conditions for more life which creates conditions for more life . . . These loops create change, not stability. I see my environment as a creation of life, a windshelter against the howling gale of life-disrupting energies. For a billion years, life had expanded this shelter. Just recently, humanity has emerged within it. We are completely dependent on all the life that created and sustains this environment. So well does it shelter us that we can barely hear the raging winds. For this we should feel humble gratitude. Unfortunately, we assume that the quiet of our birthplace is the way the world must always be, and so hack away at the shelter to make more room for ourselves.

The current environment is as dependent on life as life is dependent on it. Darwin destroyed the notion that life and environment are independent. Evolution, currently, is the history and explanation of how the environment shaped life. The Gaia Hypothesis completes the theory by showing how life shapes the development of its environment. The two are joined by many chains of cause and effect.

Evolution becomes more than genetic adaptation to the environment. The existence of feedback between life and environment allows them to transform together in ways we have yet to imagine. Evolution is like the windshelter on the ridge, like the grass in the stream. It is the history of small shifts, each within the limits of possibilities, creating new equilibriums with new limits of possibilities until, one day, what was once impossible exists. In earlier times, there was no motility, no sex, no vision, no flight, no consciousness. It was impossible for life to express itself in these ways. Flight, for example, was overwhelmingly impossible for oceanic, unicellular life. And yet, now there are birds. Evolution is the history of how the impossible becomes possible.

Positive feedback loops can undo what they created. We saw how grass in a channel neutralizes erosion and nourishes life. The same interactions cascading in the opposite direction, however, nourish erosion.

If rain falls faster than the soil absorbs it, the excess runs off. As it moves downslope, it begins converging. The converging nature of a



Land is a balance between uplift and erosion.

drainage network initiates erosion. With each convergence, runoff increases its mass and velocity and, therefore, its erosive energy. (Its velocity increases because combined volumes have proportionally less surface area contacting the channel sides, which frictionally resist the water's flow.) If the converging runoff's energy becomes sufficient to carry away the surface it flows upon, erosion begins.

This erosion exposes plant roots, stressing the plants in the channel. As they fade, their frictional resistance is lowered. The water flows more powerfully, making the channel barer and smoother, allowing the water to flow yet more strongly.

The slight lowering of the eroding channel concentrates the water into a slightly deeper, narrower chute. Not only does the deeper water flow faster, its increased energy is focussed on a smaller area. It's like turning a file into a saw. Erosion cuts narrow but deep.

The lowering of the channel bottom steepens all the slopes feeding into the gully. Erosive

energy increases. First the main gully erodes upstream, as the runoff plunges down the head of the gully. Slower to develop are the channels that start out as rivulets tumbling down the steep sides of the waterway and grow into side gullies radiating from the central stream. These side gullies allow runoff to converge on the main gully by a shorter and much faster route. Erosive energy increases.

The gullies cut into the water table. Subsurface water, which previously percolated slowly down the entire length of the hill, now surfaces in a gully and flows quickly away. The gully drains the watertable, lowering it below the root systems of many plants. They wither. Fewer leaves absorb the rain's impact, mulch the ground, slow the runoff. The soil becomes less absorbent. More of the rain runs off and runs off faster. As soil washes off the slopes, the slopes steepen towards the gullies, allowing runoff to occur even faster. This increasing erosion exposes the roots of plants still growing on the slopes. They die. Less soil is protected by life. Erosion spreads. Runoff converges ever faster, obtaining erosive force ever further upstream.

The first lesson I learned was not to directly oppose great flowing forces.

This is an example of positive feedback. The effects of erosion (fewer plants, steeper slopes, more runoff, less groundwater, greater velocities, quicker convergence) all interact and become causes for yet more erosion. Erosion, unchecked, spreads. The result is completely different from that of the grassy channel in which the channel grows broader and shallower, the soil becomes deeper, the streambed and watertable rise, and plants grow more abundantly. And yet both sequences are underlain by the same physical laws, are built from the same causes and effects. In fact, they are the same sequence, just developing in opposite directions. One direction created the environment we evolved within. The other undoes it (and perhaps us, eventually).

Gaia was created by positive feedback loops optimizing the conditions for life. Actions such as overgrazing shift the movement to the other direction. If the cattle are removed, the area reverts to a Gaian direction. Like a teeter-totter, the positive feedback loops can tilt in either direction. There is some balancing point upon which these loops rest. The "balance of nature" is profoundly true.

THIS BALANCING POINT is the part of Gaia I've tried bringing consciousness to. For the last five years, I've lived in areas eroding because of overgrazing. The cows are beyond my control. The textbooks on erosion control assume bulldozers, money, consent of the landowner. All I have is a shovel. How can I use it to tilt the balance? In pursuing this question, I find myself adopting again and again the strategies of Gaia. And as I watch them actually work, they begin taking on allegorical proportions.

I built checkdams. Large checkdams lured me with their promise of doing so much. But the forces that wash out checkdams increase in proportion to their height and their ambition. The dams did fine until heavy rains came. Then, when I needed them most, they gave way. The released torrent often did more damage than the unchecked flood would have. The first lesson I learned was not to directly oppose great flowing forces.

A variation of this is, "Don't try to turn water 90 degrees." Often I want to divert runoff from a cowtrail. Runoff will surmount and erode an earthen berm built directly across the trail, perpendicular to the flow. But an angled berm works. The water turns gradually, building a momentum that helps turn it even further.

Both these lessons warn against trying for instantaneous change. The further I try pushing anything from its current equilibrium, the stronger resistance I will encounter. A gently sustained push can do more than a shove. I gave up dreams of solving the problem with a few great checkdams and adopted Gaia's strategy of small, accumulative changes. Now I build many sod dams. They are only three to four inches high. They detain only an insignificant fraction of the flood. But they survive because they create only small shifts in equilibrium and so are "invisible" to the forces that wash away dams. And they quickly silt up. Over a few square feet, erosion gives way to

PAUL KRAPFEL

Freshly silted-in dam. Water flow is from right to left. Note the broad flattening of the streambed upstream of the sod dam. Future runoff will more easily overflow the channel and diffuse its energy over a much broader area.

deposition. This shift seems trivial, but on this silt another dam can be placed. When it silts up, it will be as if a six-inch dam were built. But a three-inch dam will survive where a six-inch dam can't and three-inch dams are more than twice as easy to build as six-inch dams.

Instead of one large dam, a series of small dams are laid down. As the deposits accumulate, each dam survives more easily because the concentrated force of the runoff is being diffused by the broadening streambed and the decreasing stream gradient. Plants start recolonizing the gully bottom, helping slow the water further. As deposition fills the gully's volume, the gully can't carry and concentrate as much of the runoff. Gullies overflow before runoff attains maximum power.

This strategy is also a way of working. Very often, if my work encounters increasing resistance, I stop. I return later to a new equilibrium in which further work is possible. For example, when building a channel to divert water away from a gully, I may encounter dry, hard soil. To push further would be mattock, not shovel, work. If I wait, however, the new channel will lead runoff from the next rain to the hard ground. The ground will become saturated and soft. I can then continue easily until I again encounter hard ground. Again I wait. This technique is most effective if I am pursuing many different projects simultaneously.

I was astounded at the dramatic consequences when I first unwittingly split a stream in two. Each stream suddenly had only half the mass and volume while encountering more channel surface area resisting its flow. Raging runoff split into two nearly docile streams. The drop in energy was dramatically marked by massive deposition at the point of divergence. In that particular case, I was able to keep subdividing the streams until a single torrent, at the height of a great storm, flowed and forked into many gently probing fingerlets. The dynamics of convergence were reversed.

If the convergence of runoff can be delayed, prevented, or reversed, then less of the earth will be exposed to the levels of energy that erode. But divergences can only be made in special places. They can't be made within the confining walls of a gully. They are most effective upstream of an eroding area. Channels there are still shallow, so divergences are easy. Much of the diverted water will sink into the ground or flow around the gully. Only a portion of the flow, possessing only a fraction of the former erosive energy, will move through the gully. A divergence can shift the balance over a large area downstream. Gaia uses this strategy at the grassroots level. Runoff must split and flow around each blade of grass. A slope of grass is a million tiny divergences reinforcing each other. Runoff is kept spread out and slow as it moves down the slopes, so there is no premature convergence.

Convergence/divergence has become a metaphor for understanding my culture. I see my culture full of institutions that centralize political and financial power with organizational hierarchies that concentrate authority upon a few. Can such convergences, at some unknown point, become erosive despite the best intentions of all involved? If so, we should develop structures and actions that divert power wel[illegible]ostream of the eroding areas.

Positive fee[illegible] loops have two directions, and each d[illegible] expresses power in a dif-

ferent way. In the erosive direction, power increases when more of the rain runs off and runs off faster. Floods peak fast and very high. The drainage network concentrates more water to a smaller area downstream. The power of water is expressed as a very brief but intense burst of erosion. This is the kind of power I was taught about as I grew up. Concentrated power is harnessable power. It serves. It excites. It's the power I desired when I first wanted to fight erosion. Power like that of bulldozers shoving earth into great dams. Point my finger here and a dam appears; point my finger there and people rush forth to plant trees.

I gave up dreams of solving the problem with a few great checkdams and adopted Gaia's strategy of small, accumulative changes.

The power of the other direction I'm only beginning to learn about as I walk on the slopes above the gullies. A bug feeding on the grass growing behind my checkdam; is its life due to my labor? The bird that feeds on that bug; have I helped create its song? I feel a kinship with this life, for just as my labor helps them to grow, so they help my labor to grow. Bare areas revegetate. More of the rain sinks into the soil. Runoff is both lower and slower. Water expresses its power by swelling roots, nourishing the life that creates more soil, raising the surface of this earth. More of the rain sinks down to the watertable. Intermittent floods subside into gentle perennial streams. And yet where is this power that nullifies floods? Nowhere is it dramatically displayed. It increases as one moves upslope, but it diffuses over the slopes even faster. It expresses itself in the many days of quiet growing, the tunneling of worms. Silently, that power keeps shifting balances, creating new equilibriums throughout the fields, making me delightfully unsure of what is possible.

Previously, an impulse to do good was suppressed by my evaluation of what was possible. "What can one person do?" Gaia's strategy of a succession of small changes leads me past that question. Now my action resonates with my impulse. Energy confined within me flows out to the world and life's response makes me feel that my actions harmonize with nature. Limits I drew between myself and the world, between what I could and could not do, dissolve, and I feel a merging with the surrounding life into something ancient and venerable, very gentle though very strong. Gaia, for me, is no longer a mythological label for a scientific hypothesis. Gaia is this feeling which nourishes me.

She even nourishes hope as I view an eroding world. For I sense positive feedback loops underlying that erosion, loops which could revert to a creative direction. I hypothesize that as human consciousness evolved, we learned to escape many of the natural controls on our population. We increased beyond the carrying capacity of the land. That tipped a fundamental balance and a vicious cycle began.

Areas where we grew too dense experienced eroding land, falling watertables, diminishing resources. The cities where so much of our cultural consciousness developed tended to be such areas. The developing consciousness that was learning of the world unknowingly surrounded itself with a world running down. This shaped beliefs which are very deep in our cultural assumptions, beliefs that the Golden Age lies in the past and the world is meant to run down. These beliefs lead to strategies designed to help us clamber to the top of a sinking ship: strategies of war, exploitation, short-term gain. These strategies unfortunately accelerate the very degradation that is used to justify them. In a vicious cycle, more and more of the Earth is exploited and degraded. Gaia recedes, becoming remote and ever less visible to our culture.

So remote has Gaia become that Lovelock had to study Mars to catch his first glimpse of her. But his ideas now allow me to see Gaia in the wilderness, a place where land still develops in a Gaian direction. I find Gaia so beautiful that I work to help her grow in the area around me. Perhaps as Gaia becomes more visible, more people will see her and work to make her yet more visible, allowing still more people to see her. Perhaps the positive feedback loop will shift and develop in the other direction. What then will become possible? ■

Ground Water

The best guide to 97 percent of the planet's unfrozen water supply. The only non-technical guide to summarize the wide variety of ways humans can interfere and pollute ground-water resources. Especially fine focus on major bioregional problems in the lower 48. For "advanced" readers who are actively involved in protecting their local water supply and are willing to spend more time and energy with a good technical book, see ***Groundwater Contamination in the United States****, by V. Pye, et al., University of Pennsylvania Press, 1983, $14.85.* *—Peter Warshall*

•

As a rule, gravel, sand and silt are more porous than other geological materials. This does not, however, mean all other materials are poor conductors of ground water. The porosity of some heavily fractured basaltic rocks, for example, is often equal to that of sand.

•

The water table varies from location to location and from season to season at the same location. This is because there is a considerable exchange of moisture from surface to ground water systems. In the natural environment streambeds often erode into the surface aquifer, creating exchange points between the ground and surface water systems known as *seeps*. In wet seasons, when surface water levels are high, streams and rivers *recharge* ground water systems, thereby raising the water tables.

Ground Water
(A Non-Technical Guide)
James Wilson
1982; 110 pp.
$5 postpaid from:
The Academy of
Natural Sciences
Publications Department
19th and The Parkway
Philadelphia, PA 19103

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Although the amount of waste discharged on feedlots overwhelms the natural assimilative capacity of the soil and local vegetation, a certain amount of attenuation does take place in the underground environment. After passing through a sufficient amount of soil, natural processes including adsorption, biodegradation, dilution and biological denitrification reduce the levels of most pollutants. The key factors, therefore, which come into play in determining the extent to which a ground water supply will be damaged by feedlot operations are the soils' permeability and the distance between the surface of the soil and the ground water aquifer. In the Texas-Oklahoma pan handle, contamination of aquifers by feedlots is not considered a serious potential problem because of the great depth of the water table. In the Edward's Plateau area of central Texas, however, the combination of shallow wells and a porous limestone aquifer creates conditions which make ground water supplies susceptible to pollution from feedlots.

Future Water

If ever there was a need for circles, it is in sewage treatment. For centuries, we have taken our rivers, run them through our homes, added our fertile fecal nutrient, then run our sewage into rivers or the sea. This downhill, linear mind has been destructive to our land, waters and mental wholeness. This is a very important book written by two men who have dedicated a good part of their lives to looping city "wastes" back to farm productivity. ***Future Water*** *speaks of the art of the possible — of Mt. Trashmore in Illinois, a pollution-free solid waste dump that is also a beautiful hill for public pleasure; of Vineland, New Jersey, that is trying to convert all its waste into economically profitable products; of Chicago's massive use of sewage sludge to grow corn. It is a healing book for the urban/rural controversy. It is a realistic book discussing the conflict between engineers and biologists. For those interested in farms, cities, water, land, private vs. public sector politics, water and sewage bills, visions for a future structured with institutions that benefit humans . . . read it.* *—Peter Warshall*

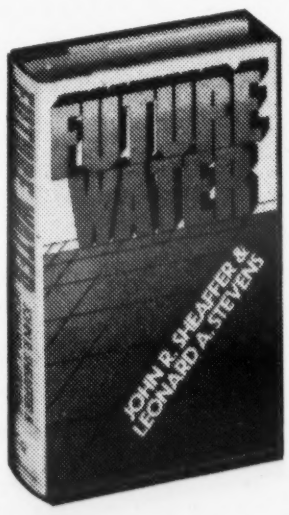
•

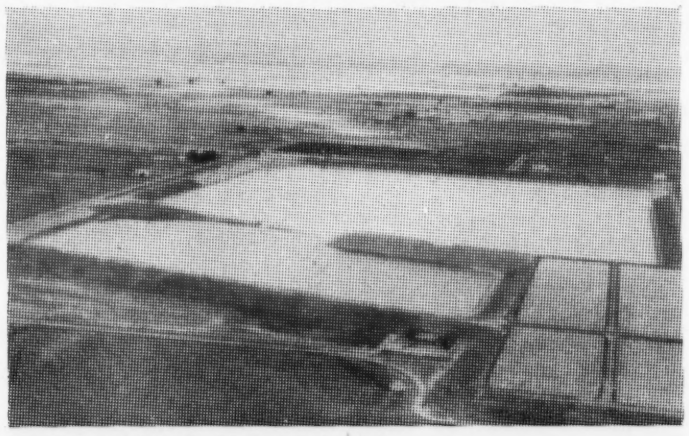
At North Glenn, Colorado, these large lagoons treat and store municipal wastewater that will be used for irrigation at nearby farms. The water, which has always belonged to the farmers, is borrowed by North Glenn, used by the townspeople as their municipal supply and then sent as wastewater to the lagoons. Here it is partially purified and stored for use by the owner-farmers as they require irrigation. The city enjoys the farmers' water, and, in its return, the farmers benefit from fertilizing nutrients that enhance the growth of their crops.

•

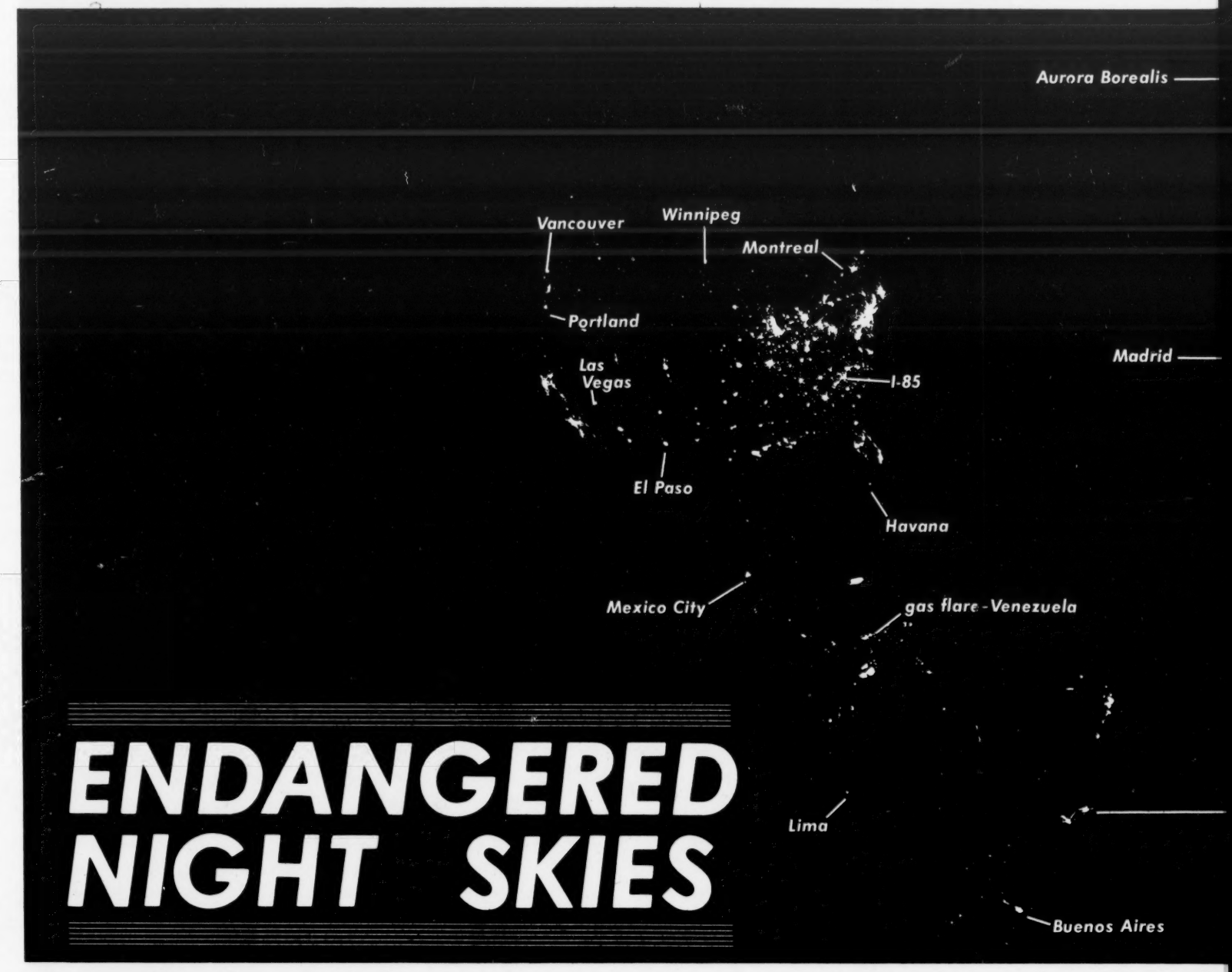
The history of the clean water law from 1972 to the present has proven that a new direction is unlikely to emerge simply because the Congress of the United States commands that we take one. The lawmakers and those of us who cheered their efforts failed to understand, not the solution, but the problem itself. It was thought to be legal in nature, but a decade of failure has shown otherwise. In that period some of us realized the problem was really one of attitude, solidified and held firmly in place by a very common motive, the profit motive. The surest profits in wastewater purification were available from selling technology that had been familiar for most of the century. Veering off into unfamiliar concepts was a risky venture, never mind that the construction grants programs urged such a course and, indeed, held out a carrot, a federal bonus for those who tried. The bonus turned out to be a peanut tossed to a pachyderm. The truly big profits came from acquiring federal grants made under the clean water law, using them for the old, linear technology and labeling the legislation's 1985 zero-discharge goal unrealistic.

Future Water
(An Exciting Solution to
America's Most Serious
Resource Crisis)
John R. Sheaffer and
Leonard A. Stevens
1983; 269 pp.
$16.45
postpaid from:
William Morrow &
Company, Inc.
Wilmore Warehouse
Book Order Department
Six Henderson Drive
West Caldwell, NJ 07006





Lagoons at North Glenn, Colorado.



ENDANGERED NIGHT SKIES

by Woodruff T. Sullivan, III

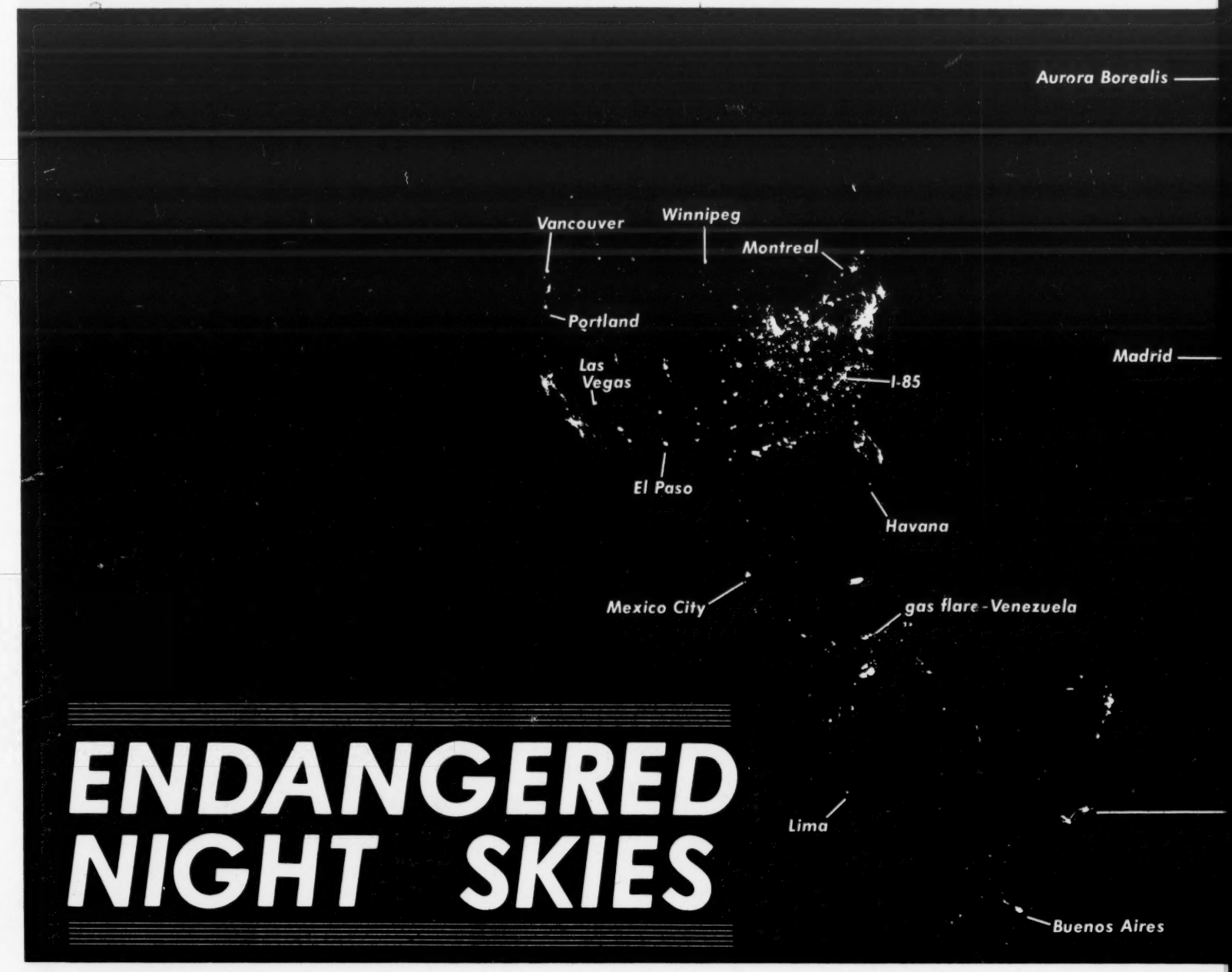
ON THE COVER IS A FIRST. It shows nearly the entire Earth as seen at night from orbiting spacecraft. Viewed by day from hundreds of miles in space, our planet shows no clear signs of intelligent life. But at night, lights from cities and rural fires visibly trace the activities of humankind.

Radio-astronomy historian, alien-intelligence searcher, professor of astronomy, and avid **CQ** *supporter Woody Sullivan wondered why no one had made a picture of the whole Earth at night, so he taped all the existing images together, and oh — we glow in the dark! I wondered, do satellites see what our eyes do? Woody says yes. The five inch eyeball of the satellite blinks open for a millisecond, rendering it about as sensitive as the human eye at night — that means black and white. On a cloudless midnight, far over the dark side of Earth, you'd see something like the cover of* **CQ**. *—Kevin Kelly*

Initially I became interested in the appearance of the Earth from "outside" through my work related to the search for extra-terrestrial intelligence. I worked out what the radio Earth looks like from interstellar distances and what might be deduced about our civilization from an analysis of the most prominent signals (*without* the ability actually to decode the video images or the audio).

This then led to the present work on the appearance of the entire Earth at visual wavelengths. I had always been fascinated by the night-time satellite photographs of the U.S. and what it said about urbanization, highways, and light pollution, and I always wondered why no one had bothered to put together a mosaic of the entire "Earth at Night." So I did. As I got into the project, I found it yet more revealing about us, for not only is there the strong contribution from urban lighting, but also other signs of our global society: gas burn-off flares in oil fields and fires for heating and cooking and slash-and-burn agriculture. And nature also contributes through ever-changing aurorae.

INITIAL CAPITAL BY DENIS TIANI



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INITIAL CAPITAL BY DENIS TIANI

NIGHTWATCH FROM SPACE

The mosaic of nighttime views presented here was obtained by the Air Force's Defense Meteorological Satellite Program. The DMSP spacecraft are designed to provide global weather coverage on a continual basis. They travel in nearly polar orbits, 500 miles up, following the globe's midnight-noon line. Every 0.4 seconds each satellite scans a 2000-by-2-mile swath on the ground, using a 5-inch telescope. Successive scans are then built up to produce an image. Although the terrain below is scrutinized at both visual and infrared wavelengths, the image here comes only from the visual band.

A DMSP telescope can detect a surprisingly small amount of light: an unshielded fluorescent lamp of only 100 watts is detectable on the original survey, although more power is necessary to show on the reproduction here. DMSP has coarser detail, but is far more sensitive than the more familiar Landsat images; for example, Landsat cannot even detect New York City at night!

What do the DMSP images reveal of the Earth at night? As expected, a large fraction of the light leakage to space corresponds to heavily urbanized regions. Streetlights account for the prominence of high-income population centers such as Europe, North America, Japan, and other major metropolitan regions. Routes such as the Trans-Siberian Railroad and Interstate 5 along the U.S. West Coast are nicely etched, while the delimiting effects of geographical features such as the Himalayas and the Urals are also apparent.

A closer look at the image reveals many other sources apart from cities. The most prominent natural sources are aurorae — a small one is seen here over northern Scandinavia. Other natural contributions arise from reflected moonlight, lightning, forest fires, high-altitude airglow, and even erupting volcanoes.

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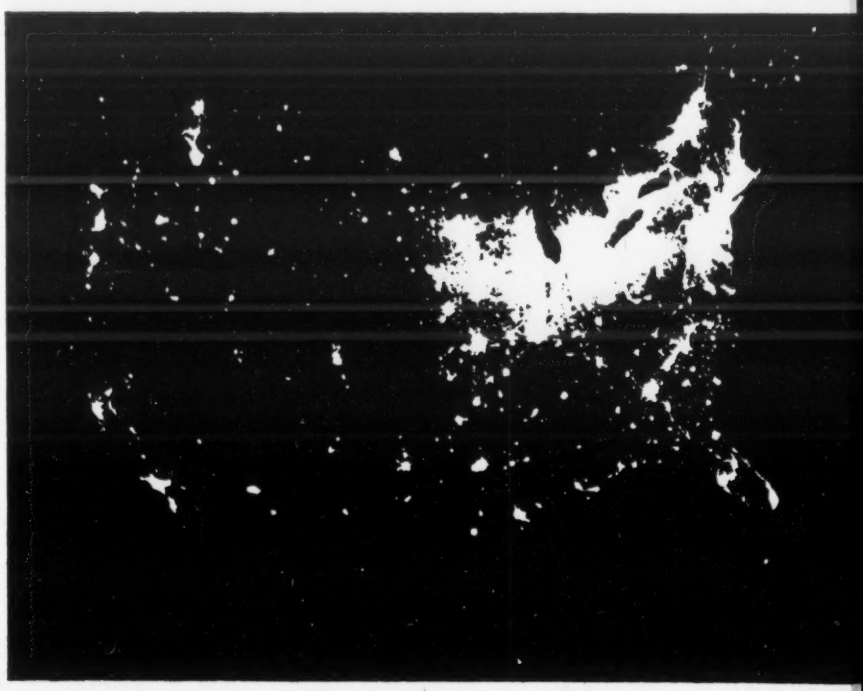
Human activity gives rise to a number of light sources. Surprisingly, many controlled fires in the tropics show up — the results of cooking and heating, slash-and-burn agriculture, and widespread clearing of forests. While the number of these fires at any location depends on the season, the yearly average is high. In the image shown here, they are prominent throughout Southeast Asia and southern India. Many recent studies have argued that this deforestation is leading towards ecological disaster.

In the more remote of the world's oil fields, the burn-off of natural gas, which comes up with the oil in a frothy mixture, is another light source. If it is not economical to pipe or to liquefy the gas, it is treated as garbage and burned in rows of standpipes. (Flares are not associated with those regions solely producing natural gas, for there the wells are properly capped.) Gas flares show clearly in Indonesia, the Persian Gulf states, the Tashkent region of the Soviet Union, Libya, Algeria, and northeastern South America (Lake Maracaibo).

Finally, Japanese and Korean squid fishermen use hundreds of megawatts of lights, strung along the decks of their boats, to lure squid to the surface. When the fleets are out squidding (but not on the present image), the Sea of Japan appears as bright as Japan itself!



SKY POLLUTION

For the astronomer, all this activity has created a grave situation. Even the slightest contamination from city lights can be disastrous when observing faint objects. With the amount of "light pollution" ever growing, observatories face severe limitations on the types of projects they can undertake.

For instance, in California over the past decade the brightness of outdoor lights has grown about 20 percent annually, a total increase of a factor of six. This means that the glare from the city of San Jose and the Santa Clara Valley now greatly hampers the projects of astronomers using the nearby 120-inch diameter telescope at Lick Observatory on Mt. Hamilton — the faintest stars and galaxies which we can see today must be four times brighter than was formerly the case. Even worse is the case of the Mt. Wilson Observatory 100-inch telescope, just outside Pasadena, which has been completely vitiated by the lights of the Los Angeles Basin.

LIGHT POLLUTION ISSUES BROUGHT DOWN TO EARTH

There is hope, however, to save observatories from the steady encroachment of light pollution. Several municipalities have cooperated with neighboring observatories in adopting lighting policies satisfactory to astronomers, and in doing so have usually found that they also save considerable sums. Injurious effects can be minimized by regulating the use of outdoor lighting, especially in the late night hours, and by using better shields above lights. But given that a certain amount of lighting is necessary, what else can be done?

It turns out that the various types of streetlights are not at all equivalent in terms of their damage to our views of the universe. Some concentrate their energy output in a few very narrow wavelength bands, thus allowing largely unimpeded observations over most of the visual range from the shortest blue wavelengths to the longest red ones. But other lights spread their energy over the entire visual band, in effect blinding the astronomer no matter where he operates. To be specific, desirable lights include the standard bluish mercury-vapor lights, largely being replaced these days because of energy inefficiency, and yellowish *low*-pressure sodium lights. The latter are energy efficient and in wide use in Europe, but have largely lost out in the General Electric-dominated U.S. market in competition with peach-colored *high*-pressure sodium lights, a harmful type which spreads its energy over a broad wavelength range and is demonstrably less efficient than its low-pressure cousin.

Nevertheless, in several recent cases astronomers have convinced local authorities to adopt favorable policies. Arizona, in particular Tucson, with its concentration of world-class telescopes, has been a leader in this field — Governor Bruce Babbit even favors making the entire state a "dark zone."

Only on the nightside is there visible evidence of civilization on Earth.

The most recent battle has involved the city of San Diego and 50-mile-distant Palomar Observatory, whose renowned 200-inch telescope and other major instruments have become much less sensitive due to light pollution — the capabilities of the 200-inch are now only equivalent to those of a 140-inch telescope at a dark site. Last February the San Diego City Council overturned an earlier decision to convert all of its street lighting to the high-pressure sodium type and acquiesced to astronomers' arguments for much less damaging and more cost-effective low-pressure sodium lights. A further, celestial benefit then accrued to the city when, in gratitude, the Observatory proposed that newly discovered asteroid 3043 be named Asteroid San Diego!

While optical astronomers battle the onslaught of light pollution, their colleagues observing with the radio portion of the electromagnetic spectrum similarly curse interference from the world's communications and radar transmitters. But unlike the optical spectrum, the radio spectrum is carefully managed by international and national agencies. This has allowed radio astronomers to gain exclusive rights to certain bands of frequencies so that, in principle, they can use these bands with little interference. The reality, however, is often otherwise. For example, a TV satellite transmitting to its ground station need only inadvertently emit one-millionth of its power at a frequency reserved for astronomy to render useless a radio telescope "dish" studying a distant, faint quasar. Other common causes of interference are aviation, weather and military radars, radio and television broadcasts, industrial activities such as welding, and even automobile engines. Radio astronomers increasingly must seek remote sites and take costly measures to counter the manmade interference.

WHAT WE HAVE LOST

Light and radio pollution is clearly a serious problem for the modern astronomer. Observatories must now be located not only where natural conditions are ideal, but where people are absent as well. The number of possible sites is rapidly dwindling and their costs of operation increasing. If anything like the present rate of growth continues, it seems certain that astronomy will eventually be forced into space, where the expense for comparable capabilities typically runs a hundred times greater.

But the greatest damage to our global culture from light pollution has already arrived. It is sad to note that hundreds of millions of people, perhaps even a majority of the inhabitants of North America and Europe, are now regularly denied the nighttime universe. No longer do they know the exquisite thrill of a meteor shooting across the sky or the deep introspection brought on by the resplendent tapestry of two thousand stars banding the Milky Way. At a time when the very survival of our species depends on such a common vision, we have instead wrapped Earth in an electromagnetic fog.

SOURCES

For further information on model ordinances, technical specifications, etc., write to Light Pollution, Dr. David Crawford, Kitt Peak National Observatory, Box 26732, Tucson, AZ 85726.

Detailed discussions and examples of DMSP imagery by T. A. Croft can be found in the July 1978 issue of *Scientific American*, page 86, and in the report, "Nocturnal Images of the Earth from Space," produced for the U.S. Geological Survey in 1977. The general problem of light pollution is discussed by K. W. Riegel in *Science* for March 30, 1973, page 1285. A full analysis by C. Sagan and D. Wallace of the much more difficult task of detecting human activities from *daytime* satellite images of Earth was published in *Icarus*, Vol. 15, 1971, page 515. Radio leakage from Earth (and its possible importance in searching for extraterrestrial intelligence) is analyzed by S. Brown, C. Wetherill, and the author in *Science* for January 27, 1978, page 377, and on a popular level in *Mercury* for March 1979.

For their assistance I thank T. Gregory and K. Gordon of the DMSP Library, now located at the World Data Center, Box 449, University of Colorado, Boulder, Colorado 80309, and D. Azose for photographic work. Negatives and prints of DMSP images are available to anyone, through the World Data Center. ■

Astronomy with Binoculars

It is possible to view heavenly bodies close-up without making huge expenditures on catadioptric lenses, equatorial mounts or worm-gear drives. The only equipment necessary is a pair of Sears Roebuck binoculars that probably have been gathering dust in a closet for the past six years. Not only can binoculars provide magnification comparable to telescopes costing megabucks, but they are much more portable.

Muirden's book is long on technical detail and short on poetry. For the latter, look up. —*Michael Zuzel*

•

Apart from the satisfaction of glimpsing it in the twilight sky, Mercury's main interest lies in its occasional transits across the Sun. The last was on November 9, 1973, when it could easily be seen with protected binoculars as a black speck moving slowly across the solar disk. Transits usually take about five hours, and the next will not occur until November 13, 1986.

•

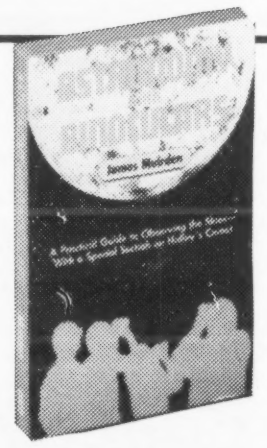
If they are of good quality, high-powered binoculars will show Saturn's elliptical outline quite distinctly (the general form of the planet was discovered by Galileo with a telescope magnifying only × 30, and its optical quality was very inferior by present-day standards). . . .

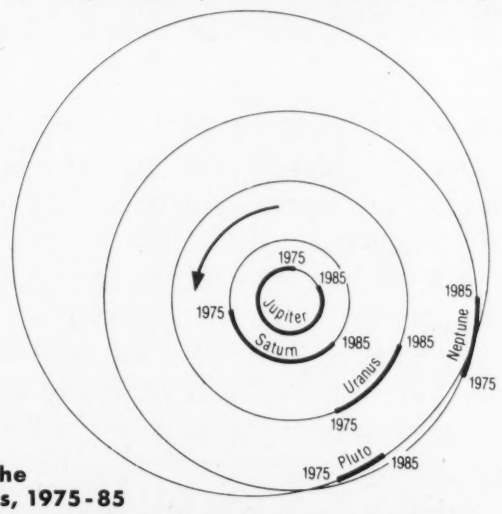
This matter of resolving power is of great importance in astronomical work, and it explains why big telescopes can detect much finer lunar or planetary detail than smaller ones; the secret is not so much magnification as aperture. A 2-inch telescope, for instance, could not detect a lunar cleft less than 400 yards across, no matter what magnification was used, whereas a 9-inch telescope could show clefts down to 100 yards across.

•

A really good fireball observation is of a value commensurate with its rarity. It often happens that the most interesting objects are seen by the least competent observers, and vague references to direction and brightness are of little use beyond establishing that the phenomenon occurred. The temptation to think that the object he has just seen was so bright that many reports must have been sent to the national center, and it is not worth adding to the pile, is natural to the novice, but sadly mistaken. If the observer feels that his observation is a good one, and can pinpoint positions on the track to within two or three degrees in the sky, it should certainly be submitted.

Astronomy with Binoculars
(A Practical Guide to Observing the Skies)
James Muirden
1984; 178 pp.
$8.95
postpaid from:
Arco Publishing, Inc.
215 Park Avenue South
New York, NY 10003
or Whole Earth Access





Movements of the superior planets, 1975-85

The orbits are drawn to scale. It should be noticed that the more distant planets not only move more slowly; they also have to cover a much larger orbit. Pluto ceased, temporarily, to be the outermost planet in 1969.

A Field Guide to the Stars and Planets

This is a confused guide: part textbook, part field guide. For skywatching, I still prefer Guy Ottewell's ***Astronomical Calendar*** *and* ***Astronomical Companion.*** *(**NWEC** p.10). But it has two features, difficult to find, that I like: star maps of the southern latitudes and an atlas for nebulae, nova, double and variable stars. (I needed a map of the southern latitudes — when Orion travels overhead and the dipper drops below the northern horizon — when I went to Africa.) The sky atlas will be great fun for those with powerful telescopes. The 50 detailed maps of sky pieces are accurate and fascinating.*

An aside. For backpacking (usually without telescope), the best way to stay in tune with the heavens is to photocopy the monthly sky chart from an astronomy magazine or ***Natural History****. This Peterson field guide is an awkward, if not a frustrating, way to follow monthly (moonly) events.* —*Peter Warshall*
[Suggested by Michael Zuzel]

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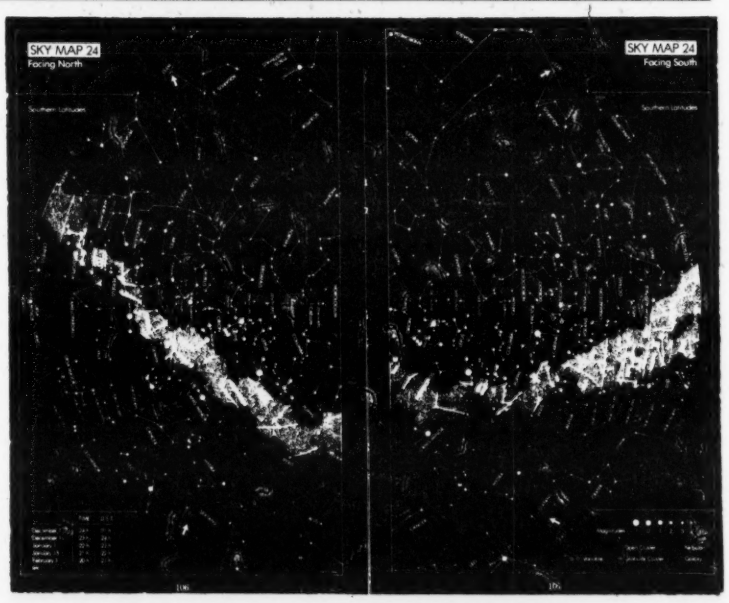
Whenever a very bright yellowish-white point of light appears in the sky in the middle of the night, it is probably Jupiter. Unlike Mercury and Venus, Jupiter is not always near the sun in the sky; it can appear high in the sky at midnight. Mars and Saturn can also appear far from the sun in the sky, rising well after sunset; Mars rarely outshines Jupiter, though, and the brightness of Saturn never equals that of Jupiter or Venus. Mars can often be distinguished by the fact that it has a slight but distinct reddish tinge. Saturn, on the other hand, appears to be yellowish. The other planets are too faint to be seen with the naked eye.



A Field Guide to the Stars and Planets
Donald H. Menzel
and Jay M. Pasachoff
1983; 477 pp.
$13.95
postpaid from:
Houghton Mifflin Co.
Mail Order Department
Two Park Street
Boston, MA 02107

or Whole Earth Access

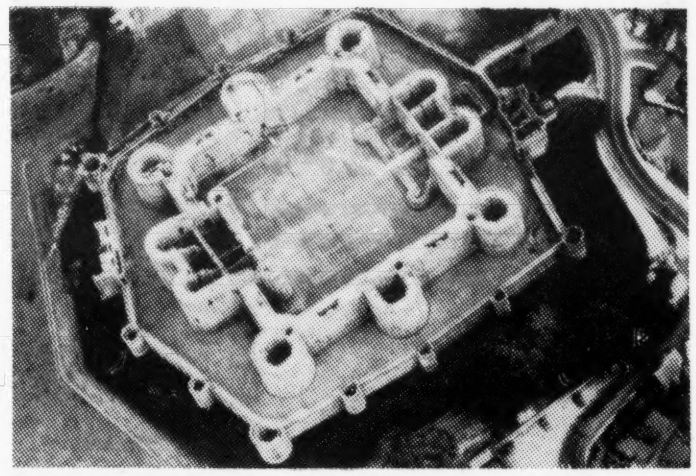
History from the Air

At first I thought the title should be "British History from the Air" — which is the book's subject — but the feeling of revelation in the book goes far beyond the concerns of the Sceptred Isle. There is a vast metaphor of history lurking here — something about large, deep patterns that are invisible in the up close day-to-day, but emerge in their abiding grandeur at a distance, their influence not gone, merely not seen.

About 260 photos, 14 in color. Geological patterns, ancient tombs and temples, field patterns, villages, boundaries and barriers, castles, great houses, towns, industry, and God's own view of Christian structures and sites. Amen.

—Stewart Brand

•



Beaumaris Castle, Anglesey, Gwynedd

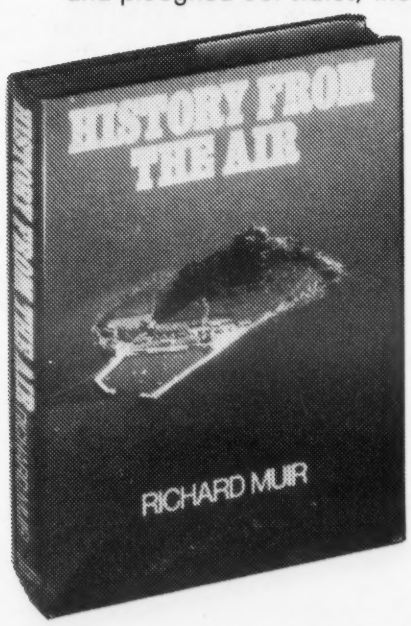
Beaumaris has often been described as the most perfect of our medieval strongholds and from the air more than from the ground the concentric plan is plainly apparent. It was one of the ten magnificent strongholds built at the behest of Edward I in the course of his conquest of Wales. The castles were concentrated in the northern heartlands of Welsh resistance and Beaumaris, Conwy and Caernarfon formed a formidable triangle of citadels guarding the Menai Straits.

•

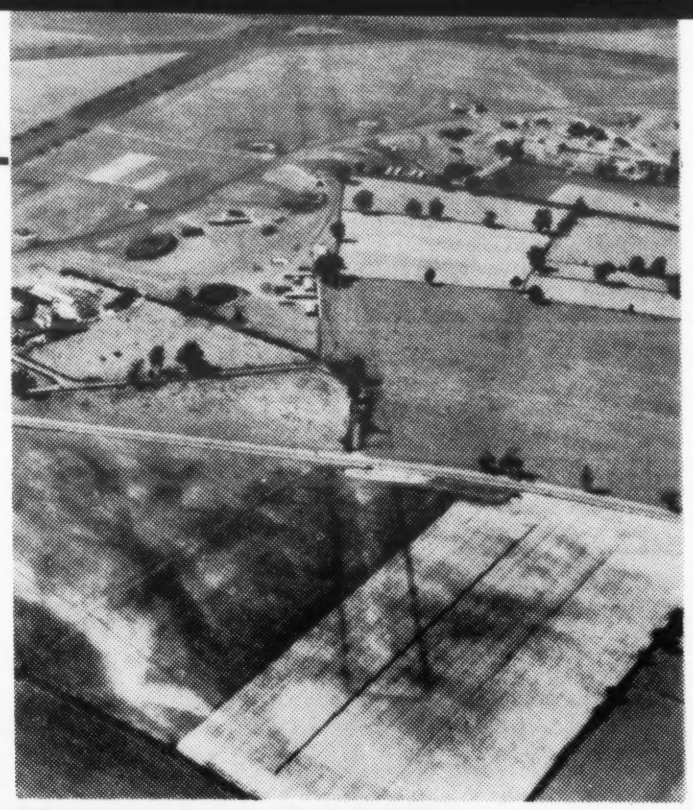
A Cursus near Scorton, North Yorkshire

The apparently bland landscape around the wartime airfield at Scorton near Richmond was photographed in 1949. At first the area may seem to contain little of note, but then one becomes aware of the shadowy lines which trace the parallel courses of ditches defining a cursus monument.

The cursuses date from the late Neolithic and Earlier Bronze Age periods and they are almost totally mysterious. They seldom survive as impressive or even detectable monuments when seen from the ground and the discoveries which show that cursuses were quite numerous have mainly resulted from aerial photography. In their decayed and ploughed-out states, they make little impression on



History from the Air
Richard Muir
1983; 271 pp.
$30
postpaid from:
Michael Joseph Limited
c/o Merrimack
Publishers' Circle
47 Pelham Road
Salem, NH 03079
or Whole Earth Access



A Cursus near Scorton, North Yorkshire

the senses, though when newly built they will have been dramatic and imposing features embodying many thousands of man-hours of toil. Their banks will often have been over head high, and anyone standing between them will have had the sensation of being in a great trough which was heading far towards the distant horizon.

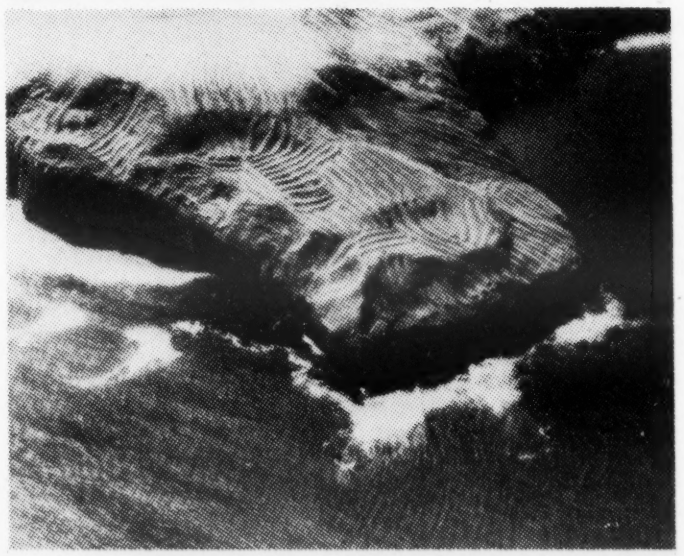
Various interpretations are on offer, some of them quite loony and none of them particularly convincing. The cursuses were named by the eighteenth-century antiquary William Stukeley, who thought that the example near Stonehenge was used for funerary games. More recently, it has been suggested that cursuses are processional avenues. They are often found to be associated with other ritual monuments such as henges and long barrows. In this case, the circular remains of a pair of Bronze Age round barrows can be seen right at the terminal of the cursus, and their siting here is unlikely to be coincidental.

•

Spade Cultivation: Lewis, Western Isles

One can hardly begin to imagine the desperation and poverty which compelled the inhabitants of these barren, peat- and rock-blanketed landscapes to create these corrugated epitaphs to sweat, spadework, over-population and land hunger. In such Highland and island locations, where many families could not afford to maintain draught oxen and the broken terrain made ploughing difficult, a form of spade or foot plough known as the *caschrom* took over the role of the ox plough. At first, one tends to assume that the ridge patterns shown in the photograph represent an ancient form of agriculture. On closer inspection though, the patterns seem quite fresh and little degraded by the passage of time. In the north-west of Scotland and western Ireland, the *caschrom* remained essential agricultural equipment during the nineteenth century.

Spade Cultivation: Lewis, Western Isles



Living the Sky

Ah. This archaeoastronomer's survey of North American Indian sky watching practices is a further step toward the do-it-yourself handbook I want to see on the subject. Serious but far from heavy, the book is an inspiring invitation to start living the sky yourself. —*Stewart Brand*

•

The north star, whose name in Pawnee is literally "the Star That Does Not Walk Around," they compared to the god Tirawahat. North Star was chief over all the other stars and saw to it that they did not lose their way. As depicted on the star chart, the north star is among the largest stars, and certainly much larger than those near it . . .

Rotating around the north star and nearest to it were the groups of stars that represented stretchers. According to the myth, in the first council, when decisions were being made about where the various gods would stand in the sky, two people became ill. The stars placed them on stretchers in order to carry them along. They still journey in the sky, traveling continually about the Star That Does Not Walk Around, and serving as a pattern for humans. As Alice Fletcher has recorded, "the people took their way of living from the stars, so they must carry their sick and dead as shown, the mourners following."

•

It is ironic that modern homeowners who seek to make their homes most efficient must rediscover principles that the Native Americans of the eleventh and twelfth centuries knew almost intuitively. Direction is essential to life. It establishes our place on this earth. However, direction without the sky for guidance is purely arbitrary and depends solely on local geography. By contrast, the cardinal directions that establish our worldly context are defined by the motions of the sky.

Living the Sky
(The Cosmos of the American Indian)
Ray A. Williamson
1984; 367 pp.
$20.95
postpaid from:
Houghton Mifflin Company
Mail Order
Two Park Street
Boston, MA 02107
or Whole Earth Access

Winter solstice sunlight striking painting in rock shelter near La Rumorosa, Baja California. At sunrise on and around the winter solstice, in a moving display of light and shadow, sunlight enters a small, shallow cave and falls across the eyes of this painted figure.

Handbook of North American Indians

This volume and volume 9, under the scholarly and gentle guidance of Alfonso Ortiz, spell out both the utterly sad demise and the tough, humorous survivorship of various southwestern tribal peoples. It is a historic volume in many ways. It contains an essay on the Yaqui by the late Edward Spicer, whose ***Cycles of Conquest*** *and compassionate history of the Yaqui set standards of the first water for Anglo scholarship. It has the best comparison ever written of Pueblo, Apache, Navajo and Yuman ceremonialism. It has photos of Juanita Ahil, a Papago friend with whom I have spent hours collecting yucca for her exquisite baskets. It is, in general, the most personal and heartfelt of this 20-volume series. Herein lie great lessons for Judaeo-Christian immigrants about a long history of regional divinities, droughts, native speech, animated landscape, wars, music and perseverance. One of the best volumes of the best series of books we have reviewed.*
—*Peter Warshall*

Apache girl's puberty ceremony (Sunrise Dance). Tapping the sacred yellow pollen from cattail reed blossoms. The pollen is mixed with a little water and sprinkled on the pubescent girl.

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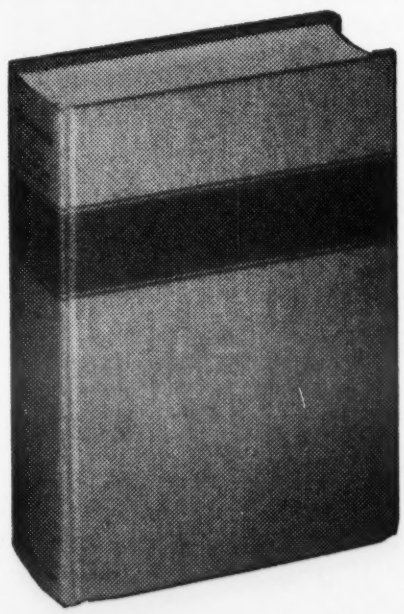
Two major types of exchange carried the burden of Piman economic life, the gift and the wager. Much rarer was the sale. Of the two institutionalized types, the gift was more important in the sense that the production and distribution of food were channeled almost exclusively through it. The goods that moved through wagering, while considerable by Western standards of gambling, were for the most part surplus items and symbols of wealth.

Wagers, like sales, permit a careful, on-the-spot matching of items between the initiator and the respondent, for example by setting the wagered objects side by side in full public view. They differ from sales in that the outcome of the exchange depends on an event such as a dice game or a footrace. One party wins everything. Wages resemble sales in another respect, namely, that they are concluded on the spot, while gifts, by contrast, lend themselves to prolonged relationships of gift and return.

Handbook of North American Indians
(Volume 10: Southwest)
Alfonso Ortiz,
Volume Editor
1983; 879 pp.
No. 047-000-00390-3
$25
postpaid from:
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402



Between Sacred Mountains

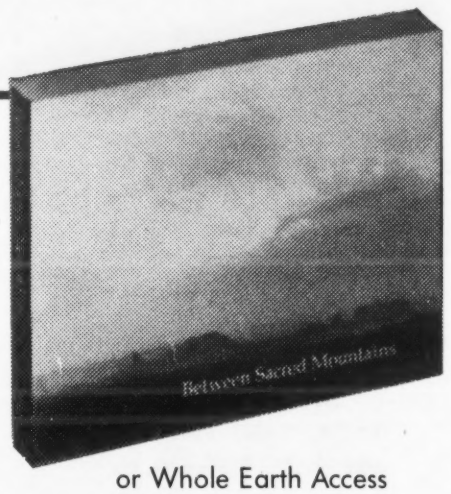
Not only a wonderful book but a wonderful kind of book. It's about Navajo country, by Navajos, to explain to the children what's going on. Contents: Land, Plant Watchers, Hunters, Anasazi, Ancestors, Spaniards, War and Reservation, Peace and Livestock, Stock and People, Navajos and Hopis, Modern Times, Remember the Land, The Future.

That the basics are covered is worthy but not surprising. What makes the book unique is its fearless wading into the toughest political issues that are rending the Navajo — livestock population, coal mining, "relocation" from the Joint Use Area shared with the Hopis, traditional ways versus modern ways. Balanced, interesting, densely informative . . . there's stuff here I had no inkling of when I spent summers on the reservation and studied endless books about the Navajo. I wish there were this kind of book about the community where I live. —Stewart Brand

•

The United States is divided by state lines and the states by county lines. Both states and Indian tribes are under the federal government in Washington and have similar powers over the land.

Between Sacred Mountains
(Navajo Stories and Lessons from the Land)
Larry Evers, Editor
1982; 297 pp.
$20.95
postpaid from:
University of Arizona Press
1615 East Speedway
Tucson, AZ 85719

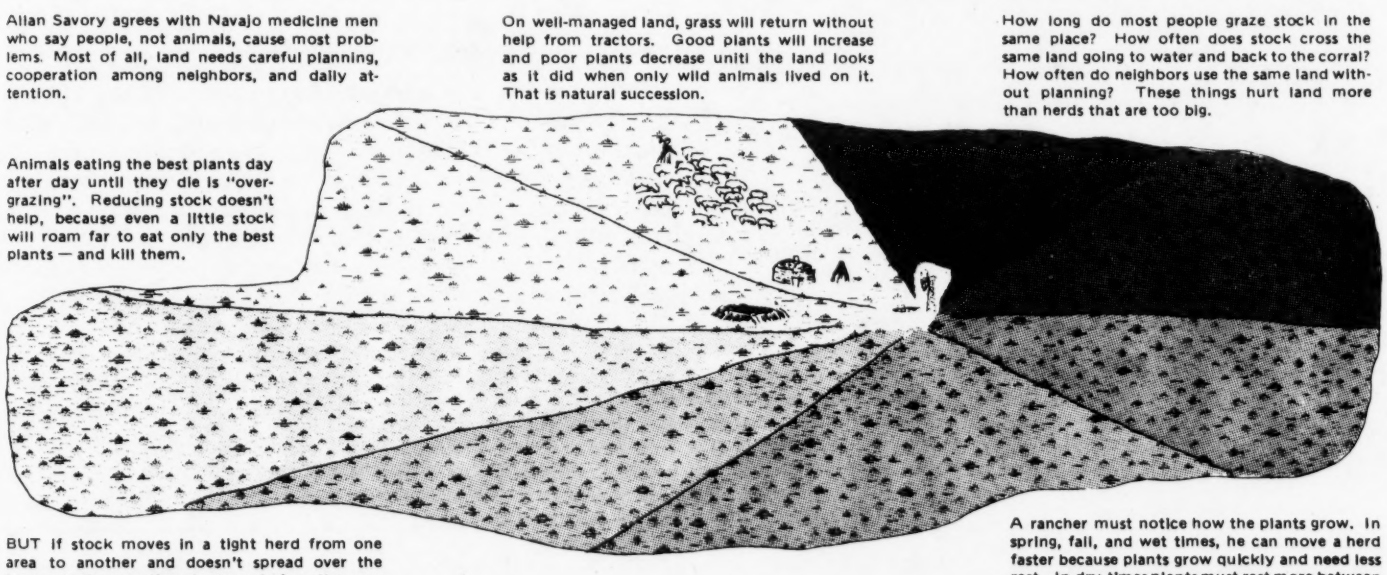


or Whole Earth Access

Navajo land lies in three states and nine counties. This has caused great confusion, and this book can't begin to explain all the problems that have come up.

In general, however, county and state lines mean little to reservation Navajos except for the public schools. They are organized by county. Most of the unanswered questions have to do with the non-Navajos.

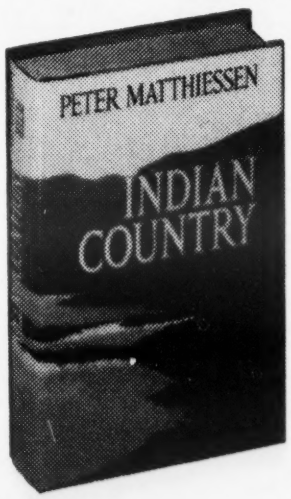
What taxes can states collect on Navajo land? From whom? Can the tribe tax non-Navajos? Can a non-Navajo criminal be sent to a reservation jail? Can reservation Navajos run in county elections?



Indian Country

*The meticulous and passionate Peter Matthiessen (**At Play in the Fields of the Lord; Far Tortuga; In the Spirit of Crazy Horse**) here engages the entire spectrum of embattled native America — from Miccosukee, Cherokee and Mohawk in the east to Navajo, Hopi, Paiute, Ute, Shoshone, Lakota, Yurok, Karok, and Chumash in the west. Injustice always is a tangled affair, but Matthiessen is as careful and unsentimental with the details as he is committed to the whole vision of a continent lived whole again. America needs Indians. It needs to stop perpetuating an historic wrong. —Stewart Brand*

Indian Country
Peter Matthiessen
1984; 341 pp.
$18.95
postpaid from:
The Viking Press
299 Murray Hill Parkway
East Rutherford, NJ 07073
or Whole Earth Access



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Christopher Columbus, going ashore in the Antilles, was struck by the profound well-being of the island Arawak. ("There is not in the world a better nation. They love their neighbors as themselves, and their discourse is ever sweet and gentle.") It has been suggested that he named them Indios not because he imagined them to be residents of India (which in the fifteenth century was still called Hindustan) but because he recognized that the friendly, generous Taino people lived in blessed harmony with their surroundings — *una gente in Dios*, a people in God. Within a decade of Columbus's arrival, these people had been slaughtered and enslaved throughout the Caribbean region, and are now extinct.

•

But as for the Yurok "spiritual leaders," he looked doubtful. "A lot of people going round these days calling themselves 'spiritual leaders' that wouldn't know the first thing to do at Doctor Rock. Nobody gives a damn what they call themselves, it's only when they get into *believing* it and make themselves spokesmen for us with the Forest Service that people say, 'Hey, wait a minute, who is *that* guy?' He has no authority.' Because Indians know just who you really are. And the Forest Service uses people like that, that's where they get their excuse for doing what they were going to do anyway; they pretend they're acting in good faith, listening to them old Indians, but of course they're not."

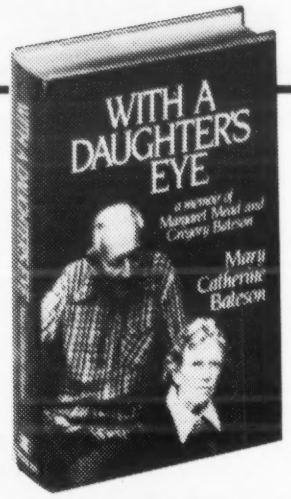
Margaret Mead, Mary Catherine Bateson, Gregory Bateson — a family about to divide.

With A Daughter's Eye

Far more than most of us, Mary Catherine Bateson embodies the ideas and work styles of her parents. But her parents were anthropologist Margaret Mead and anthropologist-philosopher Gregory Bateson — unlike-bodied, unlike-minded, and not married long. So it is a treat to wander with her through the hall of mirrors of her reminiscences of their profoundly influential (on her and all of us) and fragmented lives together. The lot of them inevitably studied their own family process and enacted their theories lovingly on one another. Successfully, on the whole — admirable proof of admirable pudding.

"On the whole" is how all three of these scientist-artists function. Even more than her parents, Mary Catherine's approach is a rich mix of emotion and intellectual critique, of skeptical probing and warm sympathy. The book is a kind of argument (another respected family tradition) that will draw any reader interested in Mead or Bateson or both into the heated discussion (prior interest is probably a requisite — it's a discussion already in progress). No one has so neatly summarized Bateson's elusive ideas as this biological and intellectual heir. Likewise, in the daughter's anger concerning her mother's concealed-to-the-end personal love life (extended and secret affairs with anthropologist Ruth Benedict and later with a male lover), one hears the firmness of principle and the impatience of feisty Margaret herself. The anger, of course, is not about the fact, but about the hiding — in a family whose entire business was turning over rocks and understanding the import of what ran out from the dark and wet.

A complex book about the complexity of inheritance, this.
—Stewart Brand



With A Daughter's Eye
(A Memoir of Margaret Mead and Gregory Bateson)
Mary Catherine Bateson
1984; 242 pp.
$17.45
postpaid from:
William Morrow
and Company, Inc.
Wilmor Warehouse
Book Order Department
6 Henderson Drive
West Caldwell, NJ 07006
or Whole Earth Access

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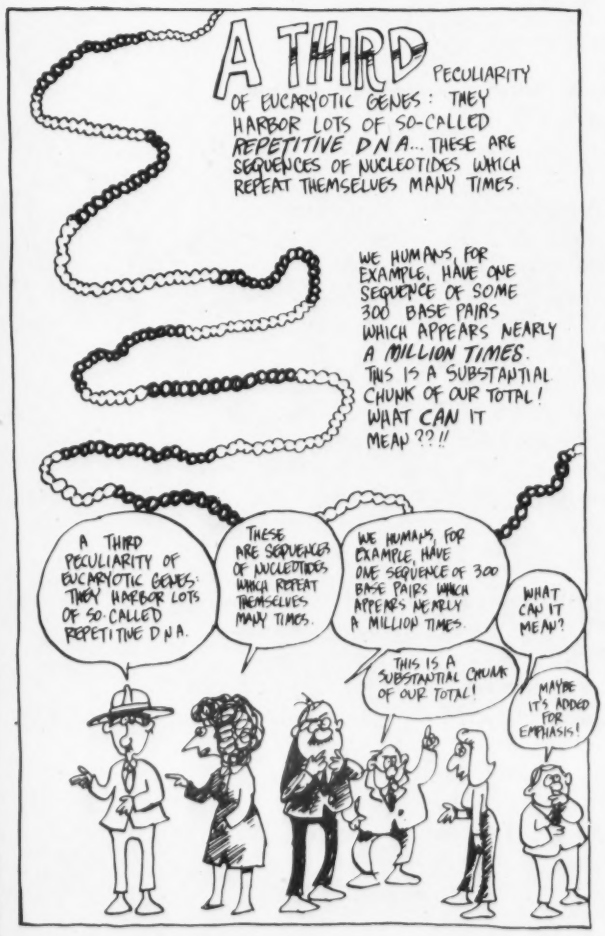
As Margaret moved around the world, engaging in conversation after conversation, she was a one-person conference. She carried a little notebook around in her purse at all times, writing down any new idea or information she thought she might want to use. . . .

That notebook was a tremendously powerful tool, for, consciously or unconsciously, we used to try to say things that would stimulate her to get it out and write them down, and then one would have the feeling of having contributed a piece to the complex jigsaw puzzle she was putting together. Later you might hear it in a technical lecture or read it recast as deceptively homespun advice in *Redbook*, lectures and articles that echoed hours and hours of conversation in a dozen cities. To incorporate even more people into the multilogue, she asked her audiences to write down their questions and would read afterward through all the questions there was no time to answer, to see what new chords she had struck with whatever idea or phrasing she was trying out.

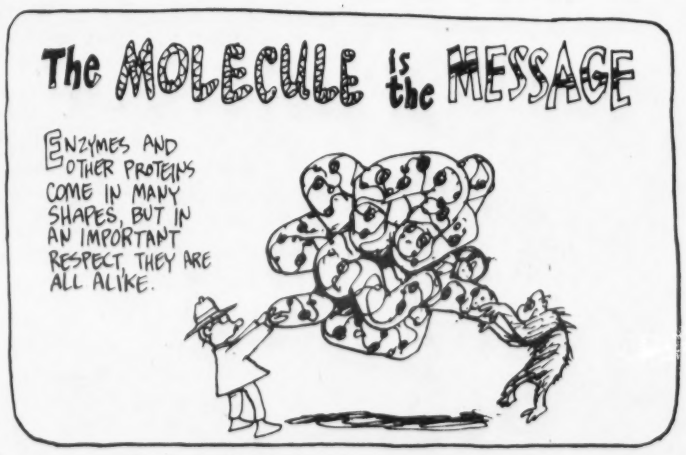
The Cartoon Guide to Genetics

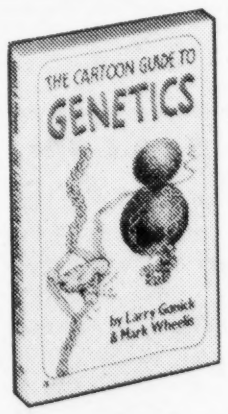


The stickiest, most wrenching paradoxes we have known are being handed to us by the science of genetics (it's now possible to have five parents).

*There's no better way to quickly come to grips with things like recombinant DNA than to chortle your way through this cartoon book. It makes genetics hilariously simple. Starts out uncovering the basic territory of chromosomes and hybrids, and ends up in the most current research on protein folding and genetic surgery. Dumb jokes and brilliant cartooning make it easy all the way — **MAD** magazine style.*
—Kevin Kelly

[Suggested by David Thaler]





The Cartoon Guide to Genetics
Larry Gonick
and Mark Wheelis
1983; 214 pp.
$6.55
postpaid from:
Harper & Row
2350 Virginia Avenue
Hagerstown, MD 21740
or Whole Earth Access

Fire In The Valley · Hackers

Fire In The Valley *is the most hilarious and thrilling book I've read in years. The national economy winds up pivoting on the misadventures, blind faith, and blind luck of a bunch of techie hobbyists and hippies with an obsession scorned by corporate America.*

As for ***Hackers****, the story goes beyond fascinating to inspiring. The Hacker Ethic is one of the noblest codes in history, but how rare to see virtue triumph this deeply. Since the personal computer revolution is still in progress, it's not too late to join the rebel cause.*

Both books show how programmers wind up programming the whole damn culture. —*Stewart Brand*

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Buyers and makers were not clearly differentiated in those early days. Using a microcomputer took so much dedication and expertise that it was hardly an exaggeration to say that any user could have become a manufacturer. There existed one amorphous subculture of technofreaks, hobbyists, and hackers, people untrained in business skills and more interested in exploring the potential of the microcomputer than in making a fortune.
—***Fire In The Valley***

•

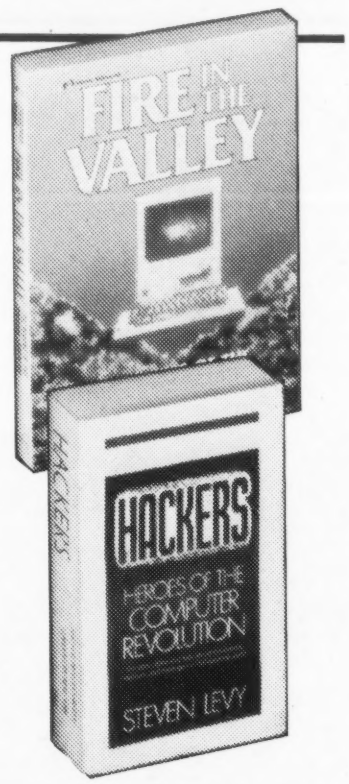
Shrayer's next idea proved more significant. Tired of having to type out the documentation for his assembler on a manual typewriter, Shrayer decided to add a novelty to his Executor (an upgrade of ESP-1). He had a computer, he thought. Why couldn't he use *it* to type a manual? There was nothing like a word processor available — and Shrayer didn't even know what a word processor was. He had to invent one. —***Fire In The Valley***

•

All information should be free.

Fire In The Valley
(The Making of the Personal Computer)
Paul Freiberger
and Michael Swaine
1984; 288 pp.
$10.70
postpaid from:
Osborne/McGraw-Hill
Order Entry
2600 Tenth Street
Berkeley, CA 94710
or Whole Earth Access

Hackers
Steven Levy
1984; 460 pp.
$17.95
postpaid from:
Doubleday and Company,
501 Franklin Avenue,
Garden City, NY 11530
or Whole Earth Access



If you don't have access to the information you need to improve things, how can you fix them? —***Hackers***

•

It was an endlessly spiraling logical loop. As people used ITS, they might admire this feature or that, but most likely they would think of ways to improve it. This was only natural, because an important corollary of hackerism states that no system or program is ever completed. *You can always make it better.* Systems are organic, living creations: if people stop working on them and improving them, they die. —***Hackers***

The Cold and the Dark

What subject would bring together biologist Paul Ehrlich, space scientist Carl Sagan, biologist Donald Kennedy, climatologist Walter Orr Roberts, and formidable others (including distinguished Soviet scientists via the historic "Moscow Link"), with doctor of doctors Lewis Thomas doing the foreward? Nuclear Winter — the hypothesized planetary dungeon likely to follow any major nuclear conflict, as destructive to noncombatant nations as to the ones fighting. No win; all lose. It's changed the game utterly. Now begins the laborious process of rethinking everything. —*Stewart Brand*

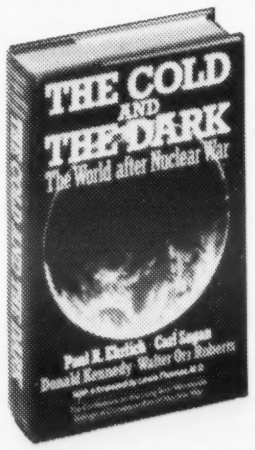
•

The most beautiful object I have ever seen in a photograph, in all my life, is the planet Earth seen from the distance of the moon, hanging there in space, obviously alive. . . .

As evolutionary time is measured, we only arrived here a few moments ago and we have a lot of growing up to do. If we succeed, we could become a sort of collective mind for the Earth, the *thought* of the Earth. At the moment, for all our juvenility as a species, we are surely the brightest and brainiest of the Earth's working parts. I trust us to have the will to keep going, and to maintain as best we can the life of the planet. For these reasons, I take these reports not only as a warning, but also, if widely enough known and acknowledged in time, as items of extraordinary good news. I believe that humanity as a whole, having learned the facts of the matter, will know what must be done about nuclear weapons.

But if the facts remain obscure, or are misunderstood to be arcane, theoretical guesswork, safe to ignore, then I have no hope for us.
—*Lewis Thomas*

The Cold and the Dark
(The World after Nuclear War)
Paul R. Ehrlich,
Carl Sagan,
Donald Kennedy,
and Walter Orr Roberts
1984; 258 pp.
$12.95
postpaid from:
W.W. Norton & Company
Keystone Industrial Park
Scranton, PA 18512
or Whole Earth Access



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ACADEMICIAN VELIKHOV (Vice-president of the USSR Academy of Sciences):

I think that one of the important conclusions of our Conference is that even the use of a small portion of the nuclear arsenals would bring about catastrophic results, not just by the immediate deaths of multitudes of innocent people, but also because it would lead to drastic changes in environment and in climate, which can bring about infinitely negative results. Generally speaking, humanity exists even today in a very unstable ecological system, so that any deviations from it will threaten his continued existence.

Therefore, all kinds of policy positions on local or so-called "limited" war, counterforce strikes, "controlled" war, flexible reaction, or prolonged war are concepts that have become, in the light of what we now know, totally baseless. They all bring about catastrophic and horrible results.

We see that no military or psychological arguments — and there are many of them — can refute these results. I think the only conclusion possible is that our nuclear devices are not and cannot be used as weapons of war or tools of war; nor can they be a tool of politics. They are simply tools of suicide.

LIFE AS A STREAM OF CONSCIOUSNESS: Alzheimer's Disease

by Sallie Tisdale

"SHALL WE HAVE a cup of tea, Margaret?" I ask.

"Yes, certainly, whatever you like," she answers, and she follows me to the kitchen, her posture stooped and her steps slow. I find the teapot and fill it with water, arrange two paper-thin teacups with delicate curved handles, pull tea bags from a box of Tetley's, and wait for the water to boil.

Margaret is at the sink, looking at a coffee mug in the dish rack. "This is one of those, you know, that you can, can have, you know, in." She puts the cup back and turns to look in the cupboard.

"These dishes are not right," she says. "Someone put these away all mixed up."
"You have so many beautiful dishes, Margaret," I tell her.

"Yes, yes," she mumbles. "These are all wrong." She pulls down a pile of bone china plates. "See — one, two, three, four, five, six, seven. There are seven here. Isn't that beautiful?" she asks, holding up a Wedgewood with a drawing of an old New England church. "That's where I go to church," she adds, "on most days, I think."

While I wait for the water, she removes the pile and rearranges them, finishing with the same order the pile had been in originally. She is distressed to find a single green plate. She searches for a match, and finally, finding none, puts it on the bottom.

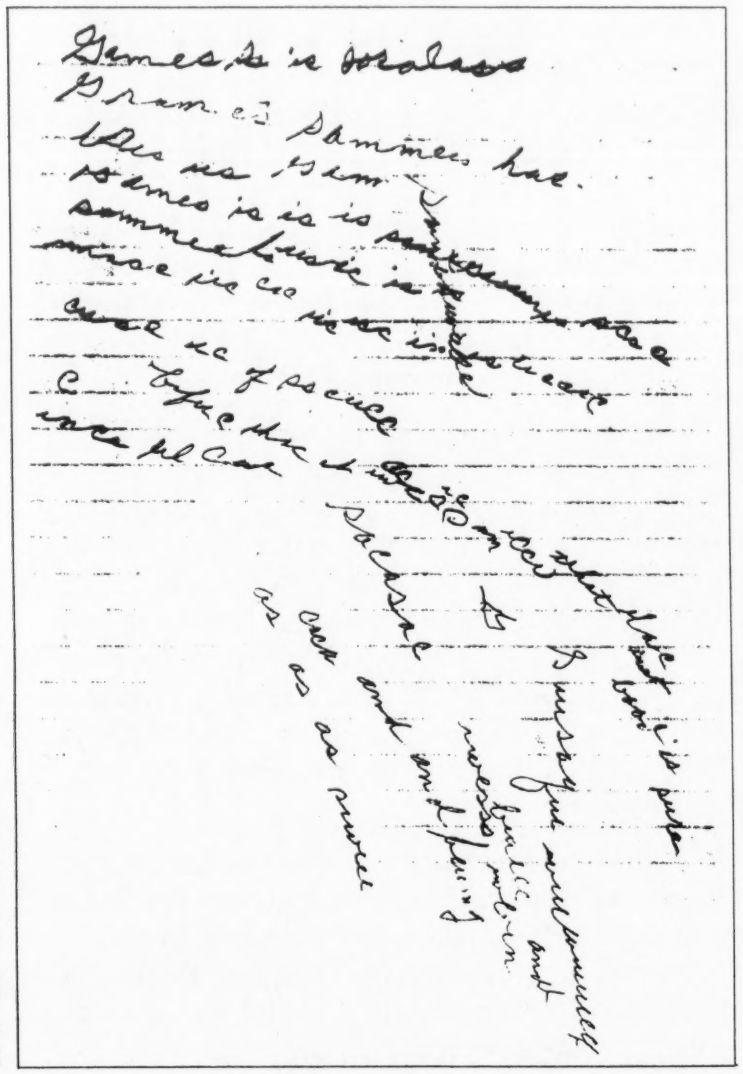
"Let's sit here," I say, and carry the cups and a plate of cookies to the sunny breakfast table. I have to call her three times before she follows.

The table is beside a windowsill covered with crayons and colored pencils. Margaret likes to color. Today she is drawn to the crayons and insists on arranging them by shade. She finds labels with her name and address and tries to fit them into the crayon box as well. She finds an empty colored-pencil box and must decide whether to throw it out. Her brow furrows; the decision is a painful one. What if she needs it later? She sets it aside just in case.

"Drink your tea, Margaret," I say several

Three years ago I eased a 52-year-old Alzheimer's patient towards death. We first noticed something was wrong when he started whistling in church. A year later he couldn't drive, and the year following he couldn't feed himself or remember what he said the word before. On our weekly walk about a month before he died, he turned and bit me. What was this Alzheimer's? The only book about it in print said his brain cells were being fried and with his wiring out, that he'd probably die of heart or lung complications, which he did. The thing that comforted me was that it wasn't him, but those tangles in his brain that bit me.

Sallie Tisdale is making a career of plunging into the frightening waters where disease and death lap at our ankles. Her last piece on autopsies and embalming is still rippling. It also hooked several publishers, taking her the way of many ***CQ*** *contributors. She put out a bid and signed with the best offer — McGraw Hill — to explore "patients' experiences with medical technology."* — *Kevin Kelly*



COURTESY OF STAN PULLIAM

The 68-year-old woman with Alzheimer's disease who composed this letter, which began so neatly on the blue lines, was unable to pencil a single word six months later.

times. "Yes," she answers, ignoring it until she is through with the arrangement. But when she suddenly stops, satisfied, and picks up her cup, she is undistracted, her hands busy and useful.

I ask her about Hood River, where she was raised. "I'll bet the apple trees are blooming there now."

"I know all about Hood River," she says, looking me squarely in the eye.

"Why is that?"

"My mother and father have a big house there," she says without hesitation. "That's where they raise, they raise," and she suddenly drops her eyes to the table, unsure. She spies a cookie, and grabs it. "They raise these, you know!" she finishes triumphantly.

I would like to say that Margaret is a friend of mine. She is an attractive and genteel woman in her eighties, with a fine sharp wit, impeccable manners, and a bright smile. She is in excellent health. She has had money all her life and still lives in the old house filled with distinctive antiques and memorabilia where she has resided for fifty years. She wears expensive, subdued clothes and garnishes them with loud costume jewelry. She never fails to greet me like a sister, with a gentle handshake.

But neither can she remember my name, and with great discretion tells me so. Everyone is Margaret's friend, for the moment, and that's why I can't call her one of mine. She lives with hired companions, 24 hours a day, and cannot remember their names, either. She has forgotten many things, about herself and the passage of time. Nothing is harder to see than that she has forgotten who she loves. Margaret has Alzheimer's disease.

We are growing old. What was once a "baby boom" has become a "population bulge" — our whole society gets older every year, inching toward twilight. Age has terrors all its own, and just as each generation is privileged to discover the glories of youth, so do we all discover the infirmities of passing time. We can laugh — grimly — about knees that are no longer willing to slide into second base, the losing battle with a few extra pounds. But consider, too, what is happening to the cells of your brain as the years pass, how they wear down and finally collapse with a hiss like an old bicycle tire. Consider Alzheimer's disease.

Alzheimer's is a disease, first, of memory. It is the ultimate failure of mind, a consummate extinction of person and past. It has no known cause, no effective treatment, and is not, in fact, technically a disease. To be proper, I must write SD:AT, for senile dementia: Alzheimer's type. Ah, dementia! The stuff of literary tragedy. It is Latin for "undoing the mind." There are more than seventy causes — but Alzheimer's disease, alone, is responsible for half.

More than two million Americans — a necessarily gross estimate — suffer from Alzheimer's disease. The symptoms are lethal. It is confined, unlike almost all human ills, to our species alone. And don't breathe a sigh of relief, of temporary reprieve, because you are only 35, only 40 years old. The youngest victim is 28. If you are what is called a "first-degree" relative — immediate family — of a victim, your chances for becoming a victim yourself are increased more than four-fold. Every *third* American family will have an affected parent.

The symptoms begin insidiously. The subtle, teasing nature of its onset is a diagnostic clue. First you forget the car keys, then an appointment. You have to re-read paragraphs; you forget to pay bills. Then, more alarmingly, you

forget names, stumble over greetings. You go through a stop sign, leave the oven on unattended, start for the store in your pajamas. Eventually you stop driving, make excuses, and stay home.

The changes scare you, make you suspicious and panicked. Friends accuse you of being irritable, antisocial. A day comes when you can't answer a question — the words won't come, or come nonsensibly. A while later, you fail to recognize someone you've known for years, and get lost in your own backyard.

And it continues.

In the cerebral cortex, the seat of judgment and reason, the cells are changing. Your brain is a racing roller-coaster, a leaping, spitting pop-and-fizz of electrons. From cell to cell — called neurons — the messages dance, across tiny spaces called synapses. In the synapses run rivers of chemicals called neurotransmitters. They are the Twyla Tharp of the brain, choreographers of memory and imagination. All that you think and dream flies hither and yon in impenetrably complex journeys; where each flashing bolt will land and blaze, in what order and in what intensity, is all determined by the neurotransmitters. Their numbers grow and diminish in waves, dependent on the world around you, on your previous reactions, on each other. For the dance to really swing, you must have healthy neurons, clean synapses, neurotransmitters that know when to back off and when to yell stop.

In Alzheimer's disease, the dance comes to a jerky, stumbling halt. Much is happening. The neurons themselves are deteriorating; they form neurofibrillary tangles, neuritic plaques, and granulovacular spaces. None of these is unique to the disease. We all have a few tangles, a plaque here and there. It is the triad, and the number, that characterize Alzheimer's disease.

The tangles are pairs of filaments wrapped around each other in the cell, preoccupied lovers. Plaques render the cell useless. The spaces fill with a granular material, which is of no help at all. These bum brain cells cluster in the cerebral cortex, and especially in the hippocampus — a center for memory — but spread throughout the brain, sending tendrils, scouts, as far as they can reach. Your neurons have gone degenerate, your brain is an opium den of stoned thoughts.

Much more. The neurotransmitters themselves begin to disappear; the riverbeds get shallow and dry. Without their direction and messenger service, communication stops at the end of the neuron, waving to the unreachable distant shore. For unclear reasons, the brain itself shrinks in size, its electrical activity is diminished, and the brain waves slow down. The brain uses less glucose, its fuel, possibly for the simple reason that it is working less.

An Epidemic of Attention

LEWIS THOMAS CALLED IT "THE DISEASE OF THE century." To others, it's an "epidemic," as though we caught it from each other in grocery store checkout lines. The epidemic is simply one of attention: Alzheimer's disease is, if not the disease of the century, the medical fad of the year.

Young Dr. Alois Alzheimer described his dubious namesake in 1907, but none of my two-year-old nursing textbooks mention it. It has taken this long for enough of us to live long enough to be worth noting. Alzheimer's disease is not caused by aging, but it is age-related: that is, like cancer and heart disease, the symptoms occur more frequently in the older person. The cause may be rooted in childhood, for all that is currently known, but in most people the signs lie below the surface until the fifth decade.

Physicians (some for the first time) have also "discovered" Alzheimer's disease very recently, partly through the efforts of the private volunteer organization ADRDA. People who would have been dismissed as senile a few years ago are now being examined more closely and tested at length before diagnosis. Many thousands, however, continue to languish in nursing homes without any diagnosis at all, because no physician has been energetic or observant enough to spot the pattern in their behavior.

Theories, too, are trendy. What research is done where depends largely on funding, and funding depends on the bias of its source and the current climate in medicine. New research is based on old research, new theories are acceptable only in the light of old theories and old research. A broader view, one that favors a combination of causes generating a combination of treatments, has yet to be widely approved.

With Alzheimer's disease, like so much research in areas as diverse as history and ethnography, the view is directed downward, eyes half-veiled. In this particular case, the narrow focus is on the biochemical nature of brain cells. Such a small picture prohibits a vision of the whole person, and, beyond the individual, of the cycles of growth, life expectancy, and natural controls of population that have proven so fruitful to more daring thinkers. —*ST*

Some messages get through on detours, or get lost. You want to say, "I need a drink," and it comes out "I cleaned the sink." You go to urinate, and stand in the corner instead of the toilet. Faced with a shirt, you cannot put it on, your hands won't move, you don't know how.

In these early stages, with many lucid moments in which to contemplate the missing hours and embarrassments, Alzheimer's patients may experience agonizing depths of shame. Family members often misunderstand, and exhort the person to 'try harder,' to 'pay attention.' The toll of caring for and worrying about the sick relative leaves its mark. The patient falls back on "habitual premorbid activities" — in other words, he or she depends on the past, life before the disease.

Half of all nursing home patients have some form of dementia. Most of these patients have come to live where they do when their family can no longer provide for them. Mr. Finley is an exception.

A friendly man in his sixties, in good physical health, Mr. Finley found his memory failing rapidly after his wife's death three years ago. After his symptoms were diagnosed as Alzheimer's, he decided to enter a nursing home in order to spare his daughters the difficult decision in the future. Mr. Finley can still manage his personal needs, still tries to read the newspaper every day, and takes long walks. He is friendly with other residents, but grows more dependent with passing time. He is gentle and generous to the point of being ingratiating. But he also suffers crippling depressions. When I sat down to chat with Mr. Finley, who I've known for over a year, he was quiet and preoccupied, unsure of my purpose but cooperative.

"What kind of work did you do?" I ask. Mr. Finley is sipping coffee and has a newspaper on his lap.

"Electrician!" he blurts out, laughing.

"Did you build houses?"

"Yeah," he says. "No! I wouldn't, I didn't, uh, build houses."

"You wired them," I add.

"But then I went in for the bigger stuff," Mr. Finley tells me. "Just, uh, big, you know. When they can . . . you see, I can't remember. Marie and I went over there."

"Was Marie your wife?"

"Yeah," he answers very quietly, dropping his eyes.

"You lost her," I tell him. "Do you still get depressed sometimes?"

"No, no, I don't get depressed," he answers. "I do . . . something, you know. I do things, like, when she was, she was my wife." He pauses. "I haven't got over it. And that was a long time."

"Do you know why you live here?" I ask.

"No. Well, I guess it's the place to be," he laughs. "That's all. It's all right."

"Do you have any friends here, Mr. Finley?"

"Oh, I can't say I have, have, and I can't. When I lost my wife, that put the . . . " he mumbles a moment, too low to hear. "She was all I had, you know. I never got over it."

"Do you have any hobbies?"

"No, no." He pauses a long time. "When I lost her — I never got over it."

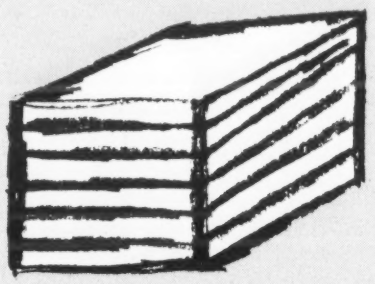
"How long were you married?" I wonder.

"Uh, I don't really know, how long," he answers me. "I know I was there! When I lost her, I never got over it."

The course — the inevitable decline — is different for everyone. With time, a few years,

The Caregiver as Patient

Helping Alzheimer's patients means helping the family.



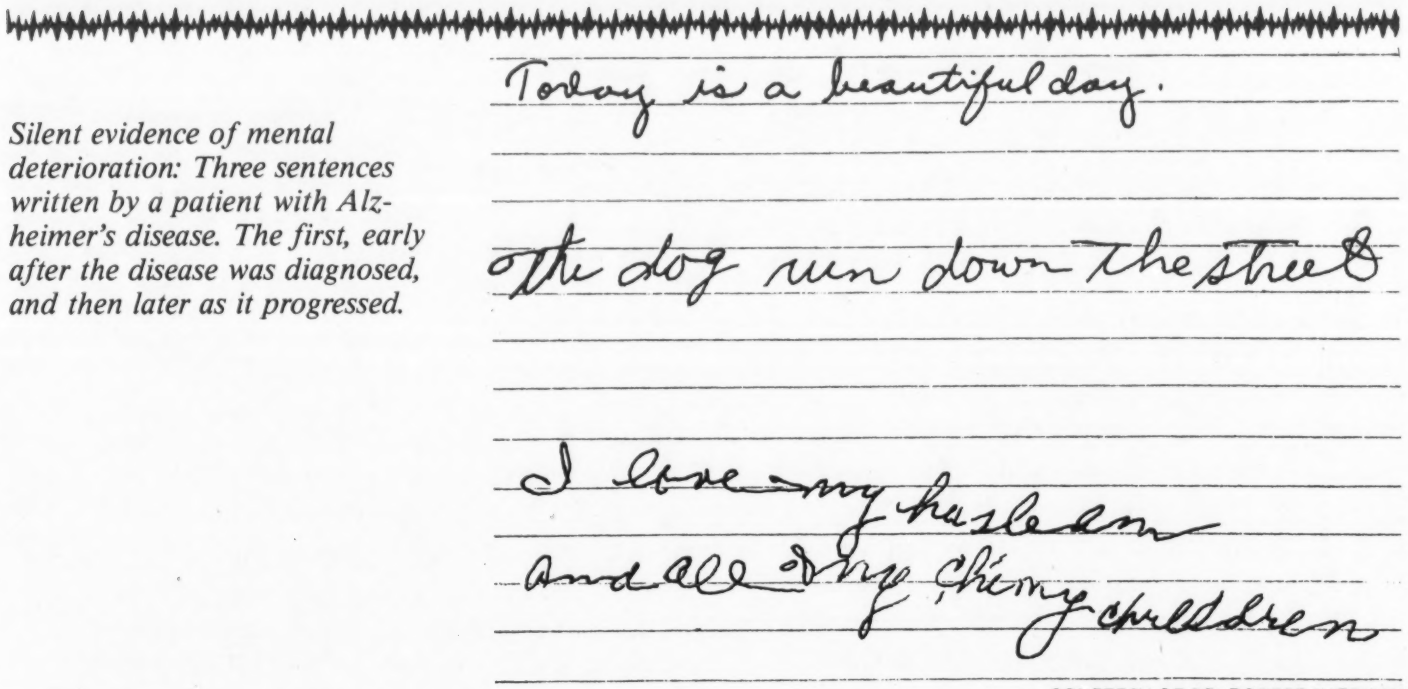
COURTESY OF STEVEN SCHREIBMAN

To help the family we need to give them emotional support, a respite from caregiving, a place to ventilate their feelings and the opportunity to grieve the loss of the healthier person they once knew.

In my work with these families I use art to facilitate the free expression of these feelings. What may be forbidden to verbalize often becomes safer to express with art materials. I gave blank paper to the families and asked them to think about what color came to mind when they thought about what had been happening recently. The picture above was produced by a man without any art experience. In it he expresses his feeling of being trapped. His world is confined and limited. He feels in a box because much of his freedom has become absorbed in the care of his family member. Perhaps he is also expressing a less conscious feeling of wishing the patient to be in the box.

By giving the family the opportunity to express themselves while receiving support from others in similar situations, they seem to cope and adapt. In San Francisco there is a very fine organization called the Family Survival Project (1736 Divisadero St., San Francisco, CA 94115, 415/921-5400). They have taken the difficult task of coordinating the educational, legal, and financial needs of the patients and families.

— Steven Schreibman, Art Therapist



Silent evidence of mental deterioration: Three sentences written by a patient with Alzheimer's disease. The first, early after the disease was diagnosed, and then later as it progressed.

COURTESY OF DR. ROBERT KATZMAN

perhaps ten or fifteen for some people, the deterioration progresses until they seem no longer able to distinguish reality, cannot care for themselves in any way. Physical problems begin to appear — changes in walking and balance, tremors and even seizures, repetitive movements. All sense of time is lost. The body's ability to regulate temperature and appetite is affected. The person may be always cold, or have a ravenous hunger or none at all. Language becomes gibberish. Some people may have agitated and violent episodes, pace constantly and mumble. Others are lethargic, wanting only to sleep, not move.

Alzheimer's disease is often called the "fourth leading cause of death" in this country. It is not the disease that is fatal, but the behavior. Victims catch flu and pneumonia because of malnutrition, exposure, or lack of exercise. They misuse or forget medication. They slip and break hips, arms, necks, and die in fires caused by their own amnesia. How many, in a moment of temporary clarity, commit suicide?

Even in late stages, though, a paradoxical social skill remains, because our brains have prepared themselves for just such an emergency.

As we learn, language is engraved throughout the brain. Bits and pieces are copied and stored in various pockets, and can be retrieved, a paring at a time, from many places. We file what we know like a paranoid clerk hiding money from imagined thieves.

What we learn from our day of birth is not just words, pronunciation, syntax — we learn the extreme subtleties of inflection and sound. We learn the slight gestures and expressions which accompany certain phrases; we learn tones and hidden intentions. We learn it all while we are very young, and refine it all our lives, and this is courteous conversation.

This composition of sound and movement is flavored by our culture to the finest detail. We store not just the word, but the entire social context in which the word is used, its value and potential for both good and harm, power and pain. Social interaction becomes a habit as ingrained and inexplicable as walking.

This is what makes it possible for a victim of Alzheimer's disease to continue a manner of functioning. She has lost her frontal lobe, but this is only her analyst, her judge, reasoner, and controller. If you say, "How are you?" she will likely answer, "Fine, and how are you?" — not because she has heard and understood the question, but because her brain, acting in its way as unconsciously as a pancreas or liver, is programmed to respond that way. She may smile blankly a time or two, and won't call you by name. "I'll have to look it up," she may say, somewhat incongruously. If you spend only a few minutes, you can put it down to preoccupation. You can't tell the difference between her and half a dozen other inattentive adults you chat with every day.

The Alzheimer's patient finds ways to compensate. "Intrusions" creep in, answers that would have been correct for a question asked ten minutes earlier. They also use "confabulation," a technical word for "making it up," inventing experiences to fill in gaps of memory. The person may also fail to recognize familiar objects — agnosia — and then become convinced that the objects he seeks are actually impostors, identical to the "real" person or thing, and go searching for the original.

The same etching of our mind that keeps us mannered helps to explain the exaggeration of personality traits in people. Without the checks and balances of the conscious ego, inhibitions are lost. The tendency to respond impulsively to a frightening situation naturally swings in the direction of past habit; the dominant man becomes wildly aggressive, the

COURTESY OF STAN PULLIAM

James is a big man, 6'4", 200 pounds. At 69 he can't dress himself anymore. "A black dog" is what he says this illustration is about, although it's unclear whether he is writing it or drawing.

shy person extremely withdrawn. These are the defenses that have worked in the sane past, and are now without a captain.

Without that synergist riding herd, the brain cannot learn. A person fails to make the intuitive leap that, joyfully, takes you from rote to mastery. What is lost, is lost forever, and all the patience in the world can't renew it. "Concepts" cease to exist. The stew of virtue and error that has been stirred into a person seems to be fading into nothingness, or a caricature of itself, painful to contemplate.

Sex is a drive like hunger, and a pattern learned like walking. It is in sexual relations that Alzheimer's disease can cause the most acute pain.

The increasing losses make it difficult for the Alzheimer's patient to sense intimacy. The familiar face is forgotten along with its meaning and the past response to it. The patient is unsure whom to trust, and the spouse is hurt and angry with the disappearing affection. What was once an emotional communication of love enduring becomes a rote response to instinct. Foreplay is skipped, the act is shortened and inelegant.

Such behaviors as public masturbation, exhibitionism, and seduction of children and strangers are sometimes seen. They are acts bred of unconscious secrets let loose by lost inhibitions, secrets we all harbor and hold dear and hidden. Of all the disturbing changes in a spouse, it is becoming a "living widow" that cuts deepest.

There is another state in which many of these behaviors and symptoms occur: emotional lability, sensitivity to the stimuli around one, inability to track thoughts and follow conversation. Life as a stream of consciousness, a constant turning from distraction to glittering distraction: the psychedelic experience, sought-after and deliberate.

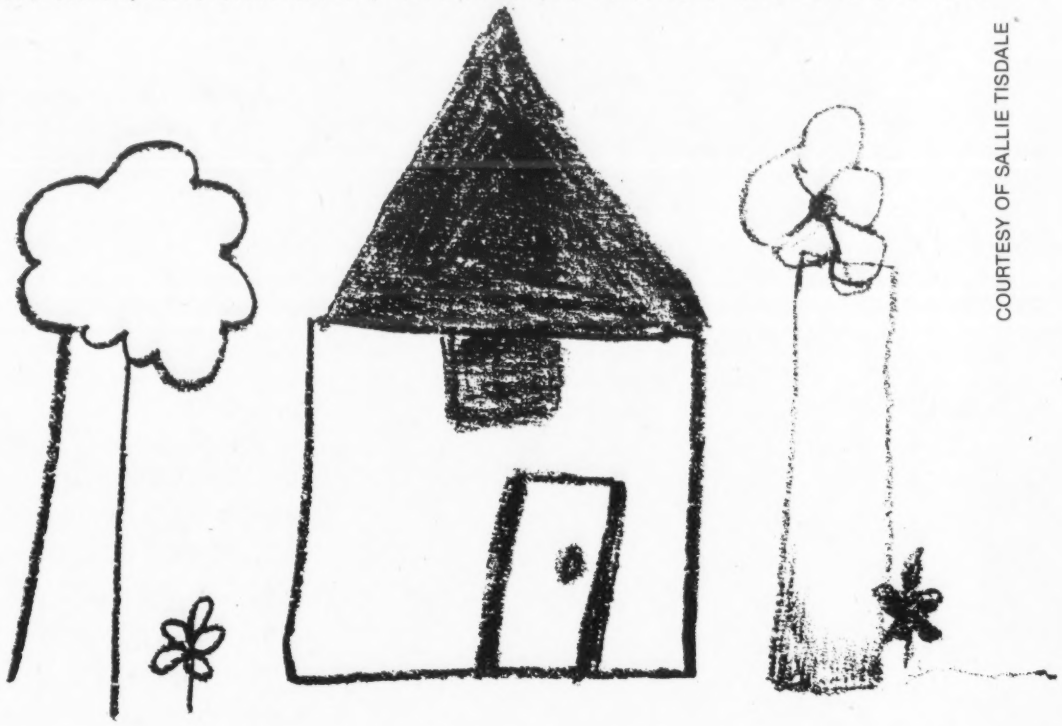
There are five current theories in vogue to describe the effect of LSD on the brain: one is that the drug makes anatomical changes in the neurons, affecting their function. Another is that it replaces neurotransmitters in the synapses, booting out the choreographer, so to speak, and changing the pace. LSD is markedly similar in structure to serotonin, a neurotransmitter found throughout the body. In the brain, excess serotonin appears to cause increased activity, and a deficiency appears to result in depressed function. Although the symptoms of Alzheimer's disease may be seen as the result of a lack, and the psychedelic trip as the result of an excess, one has only to observe Alzheimer's patients to note the similarity. They try to respond to me correctly, it lies in their faces. We are playing straight here, not letting on as to the true nature of the moment, playing the disguise. When no one is looking, anxiety, bewilderment, euphoria drift across their faces. Something is wrong here, they think. Is something wrong with me? Then that thought, like all thoughts, drifts away.

It is like dying, no one comes back to tell us what it is like. Do they watch themselves from a distance, out of control? Do they try to talk themselves down, maintain? Are they here, unable to reach us, or is it another realm altogether, where puzzle pieces fit together in ways we can only grasp in flashing extraordinary moments that slip from our fingers and leave us shivering?

I laugh, the fluid conversations get so strange. Let me lay out a few moments in the day of Roy and Millie. They have been married over forty years. Distant relatives placed them in a nursing home — first Millie, then Roy — as they both grew confused and unmanageable. I sat with them, both confined to wheelchairs by elaborate contraptions of belts and cables, and this is how we talked.

S: How are you, Millie?
M: Well, I've been getting the dog dog dog-gonedest kind of that I can't get anything

"I've never drawn anything before," the woman told Sallie when asked for a picture. She insisted that Sallie start the drawing. "The tree and flower on the left-hand side and the original square are mine," Sallie said. "Margaret did the rest. The words at the bottom both say, 'House.' This drawing took over 20 minutes, and was obviously stressful for her."



COURTESY OF SALLIE TISDALE

done in the office. (laughs loudly)
S: You can't do anything?
M: (laughs for quite a while) Well, I get them in there, and I now I carry it, carry it, I think it said ninety nine nine nine in the radio with asparagus. And I thought oh, boy, I'll never get anything done if I have to care of that! Ha ha ha ha ha ha ! But I don't care. I'm not going to be up here much longer, I'm going to the *big* city!
S: What city is that?
M: It's a *big* city, and the man in the railroad man and they *all* want me to sell *partners* for it! They say you come down here and they *all* like people like *you*! He says they like you better than they like me. (laughs) Well, I says, I just *make* 'em like me!
S: Roy, why were you spitting today? (He appears to be sleeping, but glances up)
R: Sitting? I couldn't get any further.
S: Why were you spitting? Why were you spitting on the floor?
R: Was I sitting on the floor?
S: You were spitting on the floor.
R: (incredulous) I was spitting on the floor? Well, I'm ashamed of myself.
M: Those big cotton trees, several there I can see. Evi-devi-devidently like the wonderful fill there. It had lights on it, I can see, lights on the inside. But I told them, I said, it's nice over there, and I like it better than I do here!
S: Do you, Roy?
R: No, I wouldn't say that. Just about the same.
S: Millie, where is Roy?
M: (pauses and considers, then waves a hand) Well, he's over where I come out of the (unintelligible mumbling)
S: There's Roy, right there.
M: Huh?
S: That's Roy, right there.
M: Is it?
S: Yes.
M: *Roy?*
S: Yes.
M: Well, maybe he's changed.
R: (glances up suddenly) Well, I have little excuse.

What could be the cause of all this commotion? Where is the villain? Books of evidence and still no place to begin: there is no pattern of distribution, no clumping by race or gender or geography, no other animals afflicted except — maybe — certain other high primates. The pathological changes vary from person to person through hundreds of thousands of people.

Theories of cause boil down to three schools: environmental, genetic, and immunological. In the environmental school are the proponents of a "slow" virus, one which lies dormant in the body for years before being kindled. There are researchers favoring aluminum toxicity, because of unusually high levels found in the autopsied brains of Alzheimer's victims. Again, this pattern is maddeningly inconsistent and incomplete. The trauma theory took a good look at retired professional boxers and proposed that blows to the head might initiate the deterioration.

Alzheimer's disease also has a mystifying connection to Down's syndrome, a genetic defect, which causes not only mental retardation but a number of physical problems as well. If a Down's syndrome person lives past the age of 35, he or she will develop anatomical changes in the brain virtually identical to those seen in Alzheimer's disease. One researcher goes so far as to write, "The suggestion is that Alzheimer's disease could be late onset Down's syndrome." Down's runs in families, as does Alzheimer's — sometimes the same families. Certain types of chromosomal abnormalities have been found not only in Alzheimer's patients but in their healthy kin as well.

Finally, immunological evidence suggests that the neuritic plaques may be the result of an antigen-antibody response — a reaction to a substance perceived as foreign.

You have to die to know you have Alzheimer's disease — only the microscopic examination of brain tissue will provide the "definitive" diagnosis. Oh, you could have a live brain biopsy performed — in which the skull is punctured and a bit of brain lifted out — but certain ethical problems arise when we begin to consider informed consent. Brain biopsies are very rarely done in this litigation-hungry country. We are left with many less invasive, less satisfactory tests, and no way to study the progression of the disease.

Why diagnose an incurable disease? Why bother? A lot of physicians can't be troubled, so nursing homes are filled with grandmothers labelled "senile," or "confused," and grandfathers suffering from "cerebral atherosclerosis": as though such things were the natural course of aging. They are labelled "old."

These are meaningless phrases, and dangerous ones. Ten or fifteen percent of confused people have curable illnesses, ranging from electrolyte imbalances and vitamin deficiencies to brain tumors. A slight chance, to be sure, but an important one.

So you bring Grandmother to her doctor for a work-up. This will likely include a physical examination, a neurological examintion, and a mental status examination. (Who is the President? Count backwards from ten. Explain "A rolling stone gathers no moss.") Blood is drawn, a tuberculosis test may be done. The blood will be examined for everything from signs of infection to vitamin levels.

Grandmother may have a CAT scan done to measure the size of her brain and search for tumors. A PETT test can measure how much glucose is being used by various parts of her brain. An EEG will measure the speed and type of brain waves.

And so on: many tests, and expensive, lengthy ones. Done by the book, it will cost hundreds of dollars and take weeks, involving neurologists, radiologists, psychologists, and social workers. In the end, diagnosing Alzheimer's, the doctor may put a flourish on the cake by "staging" the disease — a simple method of categorizing its extent.

A physician I know (who, for obvious reasons, wants to remain anonymous) told me, "The more tests a doctor orders, the more ignorant he is about the disease. An expert can spend a few minutes with the person and know. One interview is enough."

A disease with no certain cause has no certain treatment, either. Medical research has fallen squarely in the arena of drug treatment for the biochemical problems in the brain, in two categories, metabolic and neurotransmitter deficiency. Metabolic drugs are used to stimulate brain activity in a variety of ways, from increasing blood flow to stimulating electrical function. These are drugs such as Hydergine and piracetam. Other drugs attempt to overcome the deficiency of the neurotransmitter acetylcholine, by increasing either the chemical itself or its precursor (the substance that the body uses to make acetylcholine), or by slowing its breakdown. The last approach has had the most success, with physostigmine.

None of the success is worth cheering about. Every drug has caused improvement in some patients, none in others. Mild successes are test-related, temporary, and often no better than are found with placebos and emotional reassurance. One study seemed to indicate that a combination of piracetam and lecithin (a precursor) over a long period of time might prevent age-related deterioration of brain cells — in rats.

Some patients benefit from "symptomatic control" — that is, mood elevators and tranquilizers. Such drugs are often as much for the benefit of the caretakers as the patients themselves. Patients are given Sinequan, thorazine, and Haldol for long periods, but the "demented" population is not proven to be more clinically depressed than the healthy population over a period of time. These are strong medicines, horse pills, which can have negative effects on weight, blood pressure, and other conditions of the elderly. On these drugs, life is a haze, decision-making more difficult, perhaps even more depressing, than life without them. An overdose is deadly, so the confused person is refused access even to the medication, and yet another aspect of life is out of control.

Sometimes gross forms of behavior modification are successful. People, like any animal, can be tamed. The lower brain still stores memories — although not in fine detail — and even in the late stages, pain perception is intact. But as the disease progresses, the usefulness of painful stimuli is also lost, as the victim becomes incapable of remembering what the pain means.

Gertie is a Jewish woman in her seventies. Her daughter placed her in the best nursing home available, and she is tolerated with affection by the staff, although Gertie has retreated into the stereotypical behavior of an old Jewish woman. She is like a bad joke — querulous, sad, and worried, unable to stop talking. She stands by the nurse's desk, her forehead wrinkled, wondering aloud who will pay for her lunch, where she will go to eat, why there is a strange person (her roommate) in her room. "I can't afford boarders," she says in a flat whine. Occasionally she stops passers-by and offers to sell her belongings to pay the bills. She meets reassurances that all is taken care of with tearful gratitude, and five minutes later arrives at the desk again, worried about money. I give her a sandwich and she eats it mournfully, never moving, loose dentures clacking with each bite, and her eyes cloud over with anxiety.

We sit together in a quiet room. Today I bullied her out of bed to come with me. Her head hangs.

"Gertie, you still asleep? How come you're not feeling well today?" I ask.

She raises her eyes to stare out the window. "I haven't felt well in a long time," she answers in a monotone.

"You haven't? What's wrong?"

"I was in the hospital." She pauses. "I don't know what they told my family."

"Where do you live now?"

"Same place."

"Where is that?" I press.

She waves her hand around. "I forgot the name of it." A long pause. "It's an apartment."

"Is it a nice place to live? What kinds of things do you do there?"

"I'm sick all the time," she answers, and then mumbles under her breath. "I've been worried about myself for a long time."

"Gertie, are you worried about what is going to happen?"

She pauses again. "A long time," she repeats, very quietly. "Right now I'd be better off lying in bed."

She waits a long time, looking out the window at the early spring.

"What's on your mind right now?" I ask her, finally.

Gertie pauses a long, long time, seeming not to have heard. At last she raises her head a bit and says, "I hope I never have to give up my bed."

"Are you afraid someone will take it?"

"I don't know what I'd do," she says. "I don't know anybody here."

She is tired, worn to the bone. "Is there anything you'd like to tell me before we go back to your room?" I ask.

"Haven't got a thing."

"What do you think about all day?"

"I don't think," says Gertie. "I don't think about anything."

Nursing homes cost anywhere from $50 to $100 a day, $1500 a month at the least. Most nursing homes are not well suited to a confused patient, especially the Alzheimer's victim who benefits from familiar settings, exercise, stability, and privacy. The stark reality of overhead and payroll, health regulations, and the fact that many nursing homes are run privately for profit mean that staff is often underpaid and ridiculously overworked. The Alzheimer's patients often fail rapidly in a hospital or nursing home, especially if they are moved when some memory and skills still exist.

But to care for an adult who needs intimate care, who may be restless, angry, may talk endlessly or wail and cry — this is not easy for anyone, and can be hardest on the relatives who knew the person as a healthy adult. Some families literally disintegrate under the pressure. A study of families who try to care for senile relatives at home concluded that a high level of "mutuality" was necessary — that is, the ability to derive great satisfaction from the day-to-day care, seeing the patient as also giving, having little resentment toward the disease, and strongly needing the continued contact with the paient. Needless to say, such qualities can be hard to find in oneself. Even with "babysitters," the demands are relentless and promise only to become harder.

My "friend" Margaret has lived in her home with paid companions for almost two years. She is never left alone, and they manage housework, shopping, bills, and transportation. It costs Margaret and her family $97.50 every *day* — more than $35,000 a year. Few

Finding Local Support

H.R. 4272 is a bill introduced last fall by Representative Olympia Snowe, with 38 additional sponsors. It is a three-part bill which amends the Older Americans Act of 1965 in order to provide special funds for recruitment and training of people willing to specialize in care of the Alzheimer's patient, as well as people with other neurological diseases, and to provide respite to families of victims. The bill is still in committee at this time.

The Alzheimer's Disease and Related Disorders Association, Inc. (ADRDA), is a national, volunteer-based organization with chapters in almost every state. ADRDA provides support for research, acts as a clearinghouse for information both for the lay population and the scientific community, lobbies for better funding, and provides family support groups and respite services.

The last is perhaps the most important. Local chapters can advise concerned relatives on resources for diagnosis and care, and ongoing support groups can provide a needed outlet for family members struggling with home care or the decision to institutionalize a relative. Several chapters have begun providing respite services, sending a trained person into the home on a regular basis at a low cost in order to give the family relief.

To find a local chapter, check the phone book or write to the national headquarters. A toll-free, 24-hour information number is available, if you have questions.

ADRDA
360 North Michigan Ave.
Chicago, IL 60601
800/621-0379

can afford this for long, and Margaret is healthy and strong, sees her doctor regularly, and thanks to her companions eats well and exercises regularly. She may live many more years, and is not unhappy.

But what about Medicare, you ask? Certainly, as long as there is "reasonable hope of recovery." In Alzheimer's disease there is not. Medicare will pay for the diagnostic work-up, hospitalization for tests, and care of a broken hip or case of pneumonia — but long term nursing care, no.

Nor will the Veteran's Administration be of much help. Maybe, just maybe, for the honorably discharged veteran with at least 90 days of service, some of which was in wartime, who is permanently and totally disabled or over 65 — maybe then temporary assistance could be offered. Based on other income. On a sliding scale.

What is left? Insurance? Read the fine print. Perhaps two weeks of skilled nursing care, perhaps two months. Alzheimer's patients generally don't require skilled care. Even if your policy paid 90 percent of a cheap nursing home bill forever, in six months your share would be almost $2000.

What is left is welfare.

I spoke at length with a man who has considerable control over welfare health policies in my state. He was a bit nervous, and shall remain nameless. Off the record, he knows how impossible the system is; on the record, welfare is "the payer of last resort," and exists for the benefit of the truly needy.

Regulations vary from state to state. In mine, you qualify for welfare when all your assets total less than $1500. You cannot go into a nursing home on welfare without "prior authorization" from the agency. Welfare payments to nursing homes hover in the $35-50 per day range. Home care will be paid for if it is cheaper than the nursing homes (in other words, find someone to help out for less than $35 a day).

Most older people own their homes. That counts as an asset. If you or your spouse are not living in the house and do not make a reasonable attempt to return home, it counts. "Welfare would never make someone sell their house," said my friend in the state office. However, welfare will stop payments if your assets are over $1500. If you try to save your children's inheritance by selling the house to them for a dollar or two, you must wait two years before welfare will assist you.

No matter where the person lives or who pays, we are faced with the unavoidable problem of forcing people to do — and have done to them — deeds against their will.

I have taken care of Roy and Millie, Gertie, and Mr. Finley. Roy is a master of passive resistance; approach him with a toothbrush and he will smile grimly and grit his teeth like a steel trap. He knows, somehow, when you are handing him medicine, even when it is crushed fine and mixed in ice cream, applesauce, or bananas. He won't take it, not for his heart, his diabetes, or his agitation. He mumbles, smiles, and walks slowly away. At times he gets excited. He will hit and bite, curse and spit, and go headlong down the corridor. I have found myself lying across his gaunt, six-foot frame, two nurse's aides holding down arms and legs, while I in-

ject him with a tranquilizer. He yells, I say, "I'm sorry," and it's done.

But what is done? What have I done when I take control? With all my patience and persuasion, with drugs forced into him and restraints tied round him, I still can't get him to brush his teeth. I can take his hand and walk, put my arm around him and greet him — he may smile a moment, attempt a hazy politeness. Physically he is wasting away, a little malnourished, unsteady on his feet. He has had seizures. Like so many, there is no work in his chart from doctor or family to tell me what to do if he has a heart attack. By law and precedent, to protect myself, this means I should jump on his chest and try all the heroics, to save his life at all costs. I find it hard to imagine that I would.

Roy and Millie and all the others, millions of them, have lost the right to choose. They cannot choose treatment and they cannot refuse it. They cannot choose to live and they cannot choose to die. Everything is out of their hands, and in the hands of people who love what they once were, and nurses, physicians, nurse's aides, and housekeepers who may not love them at all.

While I was writing this, Margaret's family decided suddenly that it was time for her to go to a nursing home. "It's just too expensive," they said. I went to see her yesterday.

She was restrained in a wheelchair, the dinner tray in front of her. "How nice to see you," she smiled at me. "And who are you?"

The nurse told me that when she's allowed to walk freely, she will untie the other confused patients, or slap their faces for acting crazy. "What do I do now?" she asked me, looking at the food and silverware. "What am I supposed to do with this? I'm depending on you to tell me."

I was afraid Margaret would curl up and die when she was moved, and I would miss her. But she doesn't know she's gone anywhere at all.

By the year 2000 — in 16 years — more than two-thirds of Americans will be over 50 years of age. Will the old two-thirds prevail, running the young ones ragged for their care? Or will the young, mostly healthy, keep the rest of us in check, and locked away? I wish I could believe there was some compromise, some way to melt the barriers and excite the generations into growing old, and healthy, together.

I don't want to give up my bed, either, Gertie. And like you, I've been worried about myself for a long time. ■

I want to thank the Alzheimer's Disease and Associated Disorders Association, Representative Ron Wyden's office staff, Dr. Oscar Marin, Friendship Health Center, and the patients and families who consented to interviews. Names of patients have been changed to assure privacy, but all quotes are verbatim and on tape.

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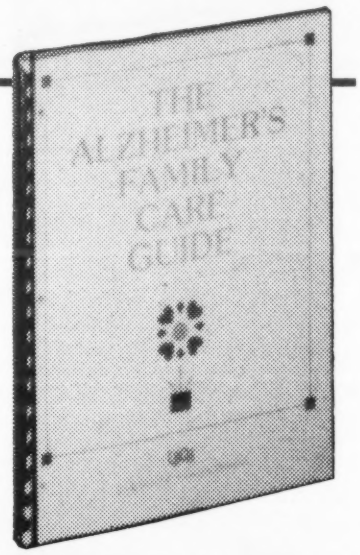
U.S. Department of Health and Human Services, National Institutes of Health. *Progress Report on Senile Dementia of the Alzheimer's Type.* Publication No. 81-2343, Sept. 1981.

The Alzheimer's Family Care Guide

A welcome addition to the lay literature of Alzheimer's disease. The step-by-step format and large print make this booklet very accessible to the person who has neither the inclination nor energy to deal with a 200-page book. Practical suggestions for understanding and coping with the disease are offered with comprehensible sections on conservatorship, living trust (California law only). A most useful guide. —*Rochelle Perrine Schmalz*

The Alzheimer's Family Care Guide
Long Beach Community Hospital
1984; 62 pp.
$5
postpaid from:
Long Beach Community Hospital
P.O. Box 2587
Long Beach, CA 90801



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Tips on interacting with Alzheimer patients:

In your interactions with the person try to:
— Be calm and reassuring
— Speak slowly and distinctly
— Use simple words . . .

Try to maintain a regular daily routine. An Alzheimer patient has difficulty coping with change. A structured routine will help the person maintain his abilities. It may also save you time and energy.

•

Don't disagree with made up stories. Instead, gently correct the person to avoid increasing his anxiety. If the person mumbles incoherently or rambles, attempt to reduce this by redirecting him with an activity.

•

Repeating the same act may be meaningful for the person and provide relief of tension. For example, the person may spend 20 minutes contentedly wiping the kitchen counter. If the activity doesn't seem to be upsetting the person, let him continue. If it upsets you, try to gently redirect his activity by giving him something else to do.

•

Try to help the person maintain his lifelong routine. For example, if he took a bath before bed, or showered and shaved before breakfast, try to follow this habit.

•

Establishing a regular bathroom routine can decrease and perhaps eliminate problems with incontinence. Try having the person use the bathroom every two to three hours. When you set up a schedule, remember that most people need to urinate when they first get up in the morning and when they wake up from a nap. Having to urinate during the night is common as a person gets older.

•

Many patients are restless at night. They wander about the house, and may try to get dressed or go outside. This can result in accidents and also deprives the caregiver of much needed sleep.

Try to keep the patient awake and active during the day so that he is tired and will sleep better at night.

•

Some Alzheimer patients become more confused and have more behavior problems in the late afternoon and evening. This is a common problem and no one knows what causes it.

•

The majority of people with Alzheimer's disease will misplace things or hide them. Most likely, the person won't remember where he put the lost item or that he did indeed put it somewhere.

To reduce this problem:
— Limit the number of hiding places by locking drawers, closets, and rooms.
— Put your keys and important papers and valuables in a locked drawer.
— Keep a spare set of keys hidden in case your original set disappears.

•

To create a conservatorship, a family member or a friend asks the court to appoint a person as the "conservator" of the patient. The request is made by filing a petition with the court for a hearing for conservatorship. At the hearing, a judge reads and hears evidence on whether a conservatorship is necessary. Close family members are notified that a hearing is scheduled. They may attend the hearing to support or object to the petition. More than one person can be appointed and the appointees would be "co-conservators" of the patient.

Alzheimer's Disease

A case-history approach to Alzheimer's disease. By relating vignettes of various situations which arise when dealing with a friend/family member who is exhibiting unpredictable behavior, ***Alzheimer's Disease*** *provides insight and compassion in coping with the physical and psychological problems which may occur. A good book for dealing with the emotional aspects of the disease, but does not really delve into the legal or medical aspects.*
—*Rochelle Perrine Schmalz*

Alzheimer's Disease
(A Guide for Families)
Lenore S. Powell
and Katie Courtice
1983; 294 pp.
$8.95
postpaid from:
Addison-Wesley Publishing Company
Jacob Way
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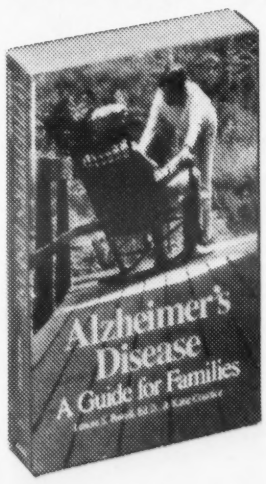
or Whole Earth Access



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It is difficult to acknowledge that the behavior of someone you love has changed radically. However, when that person shows diminished vitality, is less capable than before, has fewer internal controls, is lacking in independent activity, and becomes more irritable, increasingly volatile and considerably more forgetful than before, you will have difficulty ignoring the evidence of your own daily experience. An accumulation of incidents will bring you to the point where you must acknowledge that something terrible is happening to the relative or friend you care about. After a diagnosis is made, you will find yourself forced to consider the possibility that he may not recover. The probability is that he will become unable to do things for himself and you may be the one who must take over the major burden of caregiving.

•

Loss of memory, particularly in the case of patients with Alzheimer's disease, is neither orderly nor selective. Therefore patients can lose from their memories any information or behavior that has been learned. Such patients can forget how to tell time or the name of a loved one or wife. Inappropriate behavior such as shoplifting may result from a loss of impulse control.

Autopsy of a Murdered Man

by Charlea Massion

Part of the cargo
borne by black limousines and police cars
you are delivered to this table
from the place of your death
abandoned, the newspaper states,
bleeding last night on the edge of a golf course
an arm still bent, rigid, half-raised
against the shower of dark air.

"The diameter of the bruises has been recorded
and my assistant will make the customary Y-shaped incision,"
the broad voice of the coroner commands.
The arms of the cut cross the shoulders
skim both clavicles
meet to descend the chest, then abdomen.
Quickly the pectoral muscles peel back
and the electric blade dips through the sternum.
The ribs are snipped and retracted;
bare tissue gleams under fluorescent light.
"Now he removes the heart, the great vessels and lungs,
now the stomach, the liver, intestines and bladder."
Each group of organs slips into a metal dish,
saved for later inspection.

The assistant moves to the head
slits the scalp, peels the face forward
and the flash of the saw sinks into the skull.
"Justice," the coroner says, "We are here to determine
the cause of this death, to see that justice is done
and here we check for hemorrhage in the skull and brain."
The assistant lifts the cap of bone
and reveals lustrous ropes
coiled beneath their transparent husk.

The coroner begins to examine the organs:
weighs, sections, slices
and saves bits for microscopic perusal.
"Perhaps this man smoked heavily.
Note the finger stains,
but his lungs remain clear.
Bits of a ham sandwich, no ulcers in his stomach."
He opens the heart along the corridors
of blood flow: right atrium, right ventricle,
returns through pulmonary veins to the left.
"A clean heart for a man of fifty —
just a few calcified patches in the coronary arteries."
Dividing the trachea, the coroner extracts a wide clot of blood:
"Probably this man drowned in his own blood,

Two doctors respond to autopsies with poetry. Both are family physicians.

Charlea Massion doctors at the Chinle Health Center on the Navajo Reservation in Arizona. One of her poems was published by the august Scientific American. Patrick Clary works in a gloomy city hospital in New York, "serving the gap between specialists and people." His joy is four-month-old son Gabriel. —Kevin Kelly

beaten on the face, unconscious, bled into his mouth,
with clots blocking his throat, drowned.
Fine liver, fine liver." He explores the other organs.
"This man, I conclude from the autopsy examination,
should not have died last night. I can detect
no natural reason for the hour of his death."

Stitched up, picked up by morticians
who will paint your wounds with cosmetics,
no headline will lie lightly upon you.
What justice to the young man your murderer
found sleeping this morning in your taxi?
We have searched your body and discovered
your death possessed you too soon.
We step living into the afternoon
cross the drive where another car turns
and pulls next to the double doors.
We feel thin air seep into our lungs,
the small wash of blood in our veins,
and wait for the dead man
to surface in our dreams. ■

THE PAIN

by Patrick Clary

I had a patient once who knew one phrase.
Falling down drunk in the street, or just falling,
he broke up every cast we put on him and never healed.
Finally we admitted him from the emergency room
to stretch his shattered leg in traction
and hear him cry "the pain, the pain,"
two months last year.

Such patients go by different names
in different places, but they are all the same.
They wait until they're dying
and then brought in by cops they smell
like nothing I ever knew before, some mix of
excrement and teargas. They cannot bear
the wait that goes with being poor,
they've learned the dying never wait.
So, at midnight, you smell them coming.
Even the cops puke sometimes.
Even the tiled room with the hose
leaves them stinking and infested.

They are today's edition of
the battered textbooks of disease
I left behind three years ago,
and every day I leave behind
a new edition of myself. At three in the morning
a cop tells a plastic cup of bad coffee

they're good for one thing only,
teaching us our jobs. We almost care for them,
practice until we get it right,
and then we move uptown.
I almost care for them;
they hurt me when they can.
It hurts me that I always hurt them back.
I have stopped an empty elevator between floors
to scream like a man crushed in a car wreck
after working thirty hours and found it did no good,
the loudspeakers cry my name. There is a man
stinking of blood, oil, and beer waiting for
another pair of hands in the emergency room
and he cannot stop screaming.

I have seen a battered intern bend to blunt
a needle on the floor to make a screaming patient feel it.
I have broken a woman's ribs
to squeeze blood from her heart into her brain,
& kissed dead men until my lips were numb.
I have burned holes in white jackets and my own flesh
with the cancer-killing poisons the nurses will not give,
poisons I have pumped into veins until the veins collapsed,
have watched patients who could talk and smile
turn into plants I water like a gardener.

I've seen babies born addicted to addicted mothers
scream when their faces show
& seem to want to crawl back in against
the punishing contractions of the womb
as if they knew they faced two months of
weaning from the needle their unknown mothers loved.
I have cut flesh with no remorse and no anesthesia
to let a baby out, & thought abortion was a sacrament.

I have seen children with every bone broken, healed,
half healed and fresh that day, seen skin marked with
the loops of convenient appliance cords, seen faces
branded with the prow of a hot iron.
I have touched, gently as the antennae of a roach,
violated two year old girls who screamed at everything,
even their own hands groping toward tattered flesh.
I have diagnosed the clap in nonchalant four year olds,
accepted gratefully the thanks for
what touch I had from an eight year old
ripped open as if she'd given birth
to the uncle who raped her. Once, across the hall
from pain like that, a four year old girl
sang all of "Silent Night" to me,
sitting on my examining table swinging
her small, perfect legs as I did not weep.

I have kept the dying alive not because I love life
but because I hate an empty bed, something the
emergency room can always fill with another of the dying.
Sometimes they come up with no bed free
and they die in the halls,
sometimes they die home suddenly with the children
who play innocently with the body for hours.

I have slept four nights a week for years,
yet they have something left to teach me,
and even if I learn everything I need to leave,
and leave them, still at night sometimes when I have no sleep
to spare, I will wake and cry "the pain, the pain." ■

Health and Healing

Healing: as in the root word leading to Hale, Holy, and Whole. Health as a whole system. The question is why does any medicine, or any cure at all, ever work? Why does the equilibrium return and the body get better?

The inquirer is Andrew Weil, the Harvard ethnopharmacologist who did the first reliable scientific testing of marijuana and other natural mind-active drugs. Their unexplainable effects pushed him to explore, with utmost rigor, other loops of strangeness — placebos, warts, sneezing, firewalking, and quackery that seemed to work. The strengths of his comments on these pages derive from his extraordinarily keen powers of observation (not seem much in modern times), particularly of his experiments on his own body. The only reasonable insights I remember that dovetail both orthodox and alternative medicines usually turn out to be observations by Andrew Weil. His chapters on Homeopathy, for instance, supercede the article we ran about it in **CQ** *(Spring '81).*
—Kevin Kelly

•

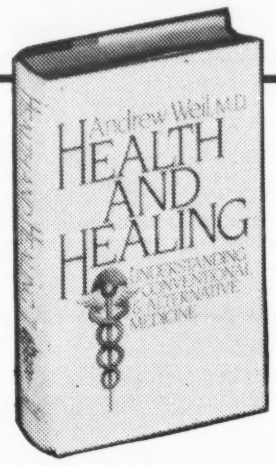
Miraculous cures of cutaneous warts are as commonplace as they are curious. Ask about them in any group of people, and you will easily collect typical stories. Usually, the warts were on the hands, most often in childhood or adolescence, The methods used to get rid of them range from the straightforward to the outright peculiar, with no consistency. For the past few years I have compiled a list of these methods. It is long and continues to grow. I defy anyone to show me what they have in common other than people's belief in them. . . .

A man I met at a conference told me that when he was a boy, his mother urged him to sneak down to the kitchen at night while she was asleep and steal something from the refrigerator; if no one found out what he took, his wart would go away, she promised. It did.

•

I have seen many cases of complete loss of allergic response in people under the influence of psychedelic drugs. For example, I once watched a man with a lifelong cat allergy play with a cat several hours after taking a dose of LSD in a setting that encouraged deep and blissful relaxation. He was with a small group of friends, all in similar euphoric states. Their emotional support helped him feel totally nondefensive and at one with the people, animals, and plants in a beautiful garden. When a cat walked up to him, he began to handle it without thinking of the consequences. Ordinarily, he got an intense reaction within minutes of touching any cat: itching and swelling of his eyes and upper respiratory membranes, sneezing, and hives on any area of skin licked by the animal. Now, for the first time he could remember, nothing untoward happened. He took pleasure in caressing and stroking the cat and in receiving its attentions. . . .

Health and Healing
(Understanding Conventional & Alternative Medicine)
Andrew Weil, M.D.
1983; 296 pp.
$14.95
postpaid from:
Houghton Mifflin Company
Mail Order Department
Two Park Street
Boston, MA 02107



or Whole Earth Access

Where There is No Dentist

I highly recommend that this amazing little book be included in the curriculum of any dental school; be left in dentists' waiting rooms for perusal (I'm gonna do it); be mandatory reading for anyone interested in demystifying (understanding) dentistry. It includes chapters on all areas of dental care from tooth decay to oral sores, diagnosis, home treatment and a brilliant section on modes for teaching the information to the lay person. It is clearly written and profusely illustrated by a non-dentist, making it enjoyable in a way that no dentist ever could. I was especially impressed with the focus on nutrition, preventive care and the relation of a healthy mouth as part of a healthy being. Though not to be substituted for timely regular dental check-ups (where available), this book remains a must in helping communities in underdeveloped countries, or anywhere else, even where there is a dentist. *—Bernie Bildman, D.D.S.*

•

Why Baby Teeth Are Important

Baby teeth are just as important to children as permanent teeth are to adults. They help a child to eat, talk, and look good.

However, many people feel that it is not worth the effort to look after baby teeth. Nor is it worth fixing them. After all, parents think, the permanent teeth will take their place.

This kind of thinking is understandable. The problem is that we are forgetting one other useful purpose of baby teeth. **Baby teeth keep space in the mouth for the permanent teeth to grow in.** If there is not enough space, the new teeth will grow in crooked, and cavities grow faster around crooked teeth.

Some people are born without enough space. But most people are not born with this problem — they lose the spaces when they remove baby teeth instead of fixing them.

•

If the gum between two teeth is red and swollen, something may be caught inside the gum pocket. Ask what the person has been eating. The object may be a fish bone, mango string, or a sharp piece of tartar.

First try to feel the object with your probe. Then remove it using a scaler or a piece of strong thread.

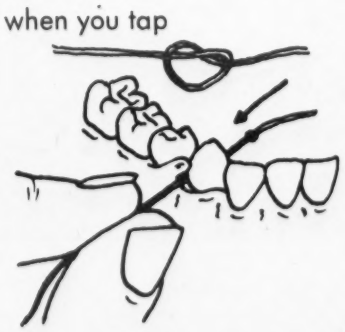
•

You can fill a cavity if the tooth does not have an abscess. There is not yet an abscess if:

- there is no swelling of the face or gums near the bad tooth.
- the tooth hurts only once in a while — for example, if it hurts only after food or drink, or when breathing cold air.
- the tooth feels the same as the others when you tap against it.

Tie a knot in a piece of thread. Then slide the thread between 2 teeth.

However, do not move the thread up and down. Instead, pull it and the knot out the side. The knot can pull the object out with it.



Where There is No Dentist
Murray Dickson
1983; 200 pp.
$4.50
postpaid from:
The Hesperian Foundation
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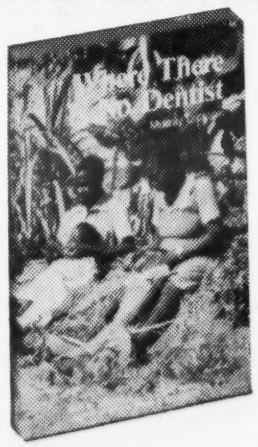
Palo Alto, CA 94302
or Whole Earth Access



It's often instructive to let a collective conversation run out its full length to see where it goes. We've been doing that in recent issues with the most certain of human deeds — dying. People we haven't heard from in a long time are writing in, saying strong things. Joe Bacon continues a dialog he began in "Just a Closer Walk With Thee" (CQ Winter 1981), speaking from the French Quarter in New Orleans.

— Kevin Kelly

IN PRAISE OF FUNERALS

by Joe Bacon

Dear Stewart,

I don't know if you remember Mrs. Ernestine Trotter. The lady who sort of adopted me at Booker T. Glass's funeral? The one I wrote the story about that you published? Her husband played the snare drums at that funeral. And God knows how many other jazz funerals over the years.

Well, now it's her turn. Her husband, Lawrence Trotter, died a week ago yesterday. My friend Sue Hall called me on the telephone Monday night and told me. She said the funeral would be on Wednesday night and the burial on Thursday, a week from the day he died.

The obituary notice was in yesterday's paper. Services were last night at St. Mark's Missionary Baptist Church on Danneel Street in uptown New Orleans. So I went, because after I wrote that story Mrs. Trotter used to call me and invite me over to their house when one of the brass bands would gather there to rehearse. I never did get to go, but the invitations gave me a warm feeling about the Trotters. A nice couple, a lovely couple. Everyone who knew them agreed with this. Very devoted to each other.

The church is on a corner in a black uptown neighborhood. Inside, the first thing I saw was Brother Trotter laid out in his casket up front, right before the pulpit and the choir. His casket was robin eggshell blue with a spray of blue-and-white carnations and baby's breath. I paid my respects and I have to tell you Mr. Trotter made a handsome corpse. A face with powerful features. A strong face. Dignified by the stillness of death. A face turned to adamant by the demands of death. And yet there was serenity in that casket. Peace. And when one of the deacons of the church got up to say a few words he told us that Brother Trotter was not dead, that he was sleeping. He was at rest. At long last he was free from the worries of this world. I nodded my head in agreement. Other members of the congregation voiced their consent. "Amen, brother. Yes, Jesus."

Pretty soon the organ started playing, then the piano. Heads turned, mine included, and we watched the family enter the church. Mrs. Trotter was assisted on each side. She was bundled up in a black topcoat, a black mantilla on her head. Twenty or so people followed her closely; men, women, children. The preacher invited everyone to stand and sing the hymn, "My Soul, Be On Thy Guard." I picked up the Baptist hymnal from my pew and, with the choir and the rest of the congregation, sang:

My soul be on thy guard
Ten thousand foes arise
The hosts of sin are pressing hard
To draw thee from the skies.

O watch and fight and pray
The battle ne'er give o'er
Renew it boldly ev'ry day
And help divine implore.

While we sang I looked around the church. There were a lot of other jazz musicians there. The Dirty Dozen Brass Band, wearing navy blue shirts with the name of their band across their backs. Alvin Alcorn, one of the old timers. Richard Allen, who used to be head of the jazz archives at Tulane University. Sue Hall and her friend Lewis Nelson, sitting right behind me. Nelson plays the trombone.

Deaconesses in white starched dresses were standing at intervals alongside the walls, watching the congregation, ready to go to the assistance of anyone overcome by emotions.

Next to the casket stood a wreath of flowers in the shape of the Masonic emblem created out of white-and-yellow mums with a halo of white gladiolas surrounding it. There was a heart-shaped pillow of white mums with a sash of red roses on the opposite side of the casket. Along the walls there were six other floral sprays.

Hymns were sung, remarks were made, the preacher, Dr. Frank L. Lewis, delivered a eulogy, the deaconesses left their posts occasionally to fan Mrs. Trotter and the lady sitting next to her as they wept. Smelling salts were passed under their noses, their backs were massaged. Their bosoms heaved as they poured out their grief into their handkerchiefs.

Basically, what the preacher had to say was that Brother Trotter was a Christian, had led a Christian life and the Christian life was the only way to live productively in this world. The acceptance of Jesus Christ was, according to Dr. Lewis, what made it possible for blacks to maintain their dignity when other men looked at them as if they were nothing, as if they didn't exist.

At the end of the services the Masons entered in a procession. Several in the congregation got up and walked out. According to a lady I

"Slow Drag" Pavageau was one of the greats. Born March 7, 1888, he got his start playing the guitar. He loved to play the waltz, the scottish mazurka, the cakewalk, and of course the slow drag. He made a three-string bass about 1927 and gained fame playing with George Lewis and Bunk Johnson at jazz halls in the French Quarter. Then in 1974 came the las' slo' drag to old St. Louis Cemetery No. 2.

COURTESY OF THE HISTORICAL NEW ORLEANS COLLECTION

talked to after the services they did this because they didn't like the Masons. Once the Masons finished their ritual everyone walked to the front and said farewell to Brother Trotter for the last time. I gave a short bow and returned to my pew.

Then it was all over and people were going back up front to speak with the family. I stood in line and was finally able to give Mrs. Trotter a hug and a kiss on the cheek. She was smiling by now, accepting the condolences of her church, her community, her relatives and friends. There was a softness to her smile. Weariness and sadness were there, but there was a glow, too. Her spirits had been bolstered by the service, by the words, the music, the feelings. Death had come and gone. She'd been hit solidly. But she was surviving. And somehow, maybe she still wasn't quite sure how or why, she was glad she was coming through.

Driving back to the French Quarter with the friend I'd gone to the funeral with, smoking a cigarette and listening to a Beethoven piano concerto on the radio, I couldn't help but think, and talk, about funerals.

I don't think the Neptune Society or any of those other cremation groups have made much headway in the South. We enjoy our funerals too much. They play an important part in our grief process, in our social life. Funerals are theater down here. For many of us, it's the only chance we have during our lives to be stars. To shine. To show off our manners. To smile graciously and accept the attentions of our friends and kin.

We're sentimental, too. The idea of burning the corpse of someone we love makes us squeamish. So does the idea of getting efficient about burying that corpse. We tend to keep it around for awhile, fuss over it, use it as the focus, the stage setting, for what is most times the biggest drama of our lives. Mr. Trotter had been dead for a week before they got around to burying him. Whites generally bury their dead faster, but blacks do it with so much more style.

I got to thinking about funerals I've experienced and the thing that amazed me most is that from just about every funeral I can call to mind, I've got fond memories. I like funerals.

There was a lady in Oakdale when I was growing up, Sal Wise, who never missed a funeral. It didn't matter whether or not she knew the people involved. It didn't matter whether they were Baptist, Catholic, Pentecostal, Episcopalian, or Methodist. Sal was absolutely ecumenical. As soon as Tom Boudreaux, the town undertaker, turned on the porch light at the funeral home, the signal that a wake was in progress, Sal was there.

The trombone player in the photo with the pallbearers carrying the casket is Nelson. He's still playing around town. A lot of times you can see him at Preservation Hall. One of our neighbors died several years ago, an old lady everyone called Miss Katie. I'll never forget her face. There was grief in every wrinkle. The neighbors all got together and had a memorial service for her in her back yard. Someone read the psalm about there's a time to laugh and a time to cry. And while someone else spread her ashes around the back yard Nelson played Amazing Grace on his trombone.

One time in Kinder, Louisiana, where my father's family was from, old Uncle Percy was at the funeral of some relative or another. Percy said he'd kissed about as many people as he could stand to kiss and here came yet another cousin, or in-law, bending down, coming at him cheek first, lips pursed, ready for that kiss. Percy backed off and said, "Now let's hold on here. All of us Bacons from around here have gotten out of that kissing habit." The insulted relative straightened up, looked down her nose at Uncle Percy and said, "Well you better pucker up anyway, 'cause here comes Cousin Will."

When my own father died I caught myself out in the lobby of the funeral home talking and laughing with uncles and aunts and cousins I hadn't seen in years. I was so shocked at finding myself having such a good time I marched myself back into the room where Daddy was laid out and forced myself to get serious again.

I never miss a family funeral if I can help it. To me this is community theater at its very best. We're all members of the cast. We're also the audience. And the critics. And we all carry out the responsibilities of our assignments very seriously.

Where else are you going to see so many relatives at one time, in one place? Couple of years ago I saw some cousins at a family funeral I hadn't seen in years. In fact, the last time I had seen one of my girl cousins we weren't even teenagers yet. When I saw her at the funeral she was holding one of her granddaughters. For a few brief moments we were able to remember being young together and it was obvious to me that we both had some very special memories about those years that were being magnified by each other's presence. Of course I've got relatives I wouldn't particularly care to see anywhere else but at a funeral, and I'm sure the feeling is mutual. But, boy, do we have a good time seeing each other at funerals!

The last family funeral I went to was for one of my mother's old aunts, Tante Natille. She'd

BETSY HARNDEN

been sick for a long time and her death was the kind everyone agreed was a blessing. The morning of the funeral a woman showed up at the funeral home with one of the family bastards in tow and proceeded to introduce her as such to every member of the family she could corner. The bastard was a young girl, a young woman, actually; she was holding her own 9-month-old baby. And the woman introducing her around was her grandmother. The grandmother claimed that one of my cousins was the girl's father. My Aunt Ernestine got indignant as hell and said to the woman, "Quela, you know that's a lie. Don was *not* the father of that girl. He told me himself. Said he went to confession and told the priest he was not the father of that child!" Quela was not impressed with Aunt Ernestine's defense of our cousin. "I don't give a damn what Don told you," Quela said, "or what he told the priest. Don is this girl's father and when she had her baby I called him in Chicago and told him he's now a grandfather!" Aunt Ernestine clutched her rosary beads to her breast, grabbed me by the arm and said, "Let's go back inside, Joe."

When my grandmother died I was living in Chicago. I flew home. Even in the country these days they no longer wake the body all night. Generally they lock up around ten o'clock and everyone goes home. But word had spread that Dena's son (Dena is my mother) was coming from Chicago and he's a hippie and since the only hippie most of these people had ever seen was on television or in magazines, they all hung around to see Dena's son the hippie. When I arrived at ten-thirty that night my mother and I knelt at the coffin and said a few silent prayers, then we went into another room for a cup of coffee. As we were standing there drinking our coffee and talking there was a steady stream of curious country folks passing by to get a glimpse of the hippie. Finally one of them broke rank, walked up to my mother, put her hand on Mama's arm, and said, "Dena, cher, even for you he won't cut his hairs?"

Mama Dora, my grandmother, looked forward to her funeral for years. Her husband and her oldest son, who had died two weeks apart during the early 1920's, were buried side by side in identical tombs. Mama Dora, as she got older, became obsessed with the idea of having a tomb built for her that was identical to that of her husband's and son's. An old uncle had built them and Mama Dora decided he was the only one who could build hers. So she set off one day, this was when she was in her late

70's, and drove by herself to Houston, Texas, where N'onc Ti Doc was living. Somehow she found him and hauled him back to Oberlin to build her tomb. Unfortunately, by this time he was old, lazy, and much more inclined to get drunk than he was to set bricks in the hot sun for my grandmother's tomb. After he'd been there for several weeks I asked Mama Dora how N'onc Ti Doc was doing with her tomb. "All he want to do is drink beer and sleep!" she complained. Finally, after he'd been there over a month and had yet to lay the first brick, my mother went over, bundled him up, drove him to the bus station, and bought him a one-way ticket to Houston.

It was at a family funeral that I understood for the first time that I was no longer young, that I was indeed middle-aged. My mother's brother, Uncle Fred, had died. When we got to the cemetery I got out of my cousin's car and joined the cluster of mourners headed for the freshly dug grave. I looked ahead of me and saw my mother and her sister walking arm-in-arm, being careful where they stepped. I stopped, turned to my sister, who was walking moved up a generation. They're the old timers now. Of course as soon as I understood that, I simultaneously had to understand that I'd moved up a generation, too. I'd taken their now. Of course as soon as I understood that I simultaneously had to understand that I'd moved up a generation, too. I'd taken their place. I'm a grown-up now. A middle-aged grown-up. And my nieces and nephews have taken my place. We're all nudging each other from one generation to the next, closer and closer to our own graves.

When my great-grandmother died I was in high school. She lived her entire life within a 50-mile radius of Chattagnier, where she was born. She never learned to speak or understand a word of English. Chattagnier is out from Mamou, Louisiana, and back then most people still spoke French. We arrived at the church early and my cousin Paul, who was then about three years old, had to pee. "Do it right here on the side of the car, quick!" my father instructed him, as the cortege was turning, just then, from the dirt road into the driveway of the church. Paul didn't have time to finish, and when Mamain's hearse passed us, Paul was sprouting a yellow arch of urine that splashed the tires. Following the casket into the church, Mamain's great-grandchildren formed a tight, giggling knot behind the adult mourners.

My very favorite funeral story is about my grandmother, Mama Dora. I was home from college for the Thanksgiving holidays. Early one morning I was rousted out of bed by my mother. "Get up! You have to drive Mama Dora to Mamou to the funeral home. Her cousin died and she's too upset to drive herself."

I was furious. I wanted to sleep late. I didn't want to drive to Mamou to a wake. But I did it, anyway.

When we got to Mamou, I found the funeral home, pulled up in front and told Mama Dora, "You've got 15 minutes in there. I'm going to go have a cup of coffee somewhere and when I come back you'd better be standing out here in front because if you're not I'm going to go back to Oakdale without you!" She got out and I went off in search of a cafe and a cup of coffee.

After driving around town for five minutes, not having any luck finding a cafe, I happened to drive past the funeral home again. There was Mama Dora, standing on the sidewalk. I pulled up, she opened the car door, climbed in and said, "Let's go back to Oakdale."

"You didn't stay in there very long."

"Mais, I went in there and knelt down at the coffin to say my prayers and I look at Adros and I say to myself, 'Mais, Adros don't look like himself, eh? He must have really change when he was sick.' Then I sat down in a chair and started saying my rosary and I saw Eunice, that's Tante Edna's daughter, and I said, 'Mais, Eunice, Adros don't look like himself, eh? He really change when he was sick.' And Eunice said, 'Mais, c'est ne pas Adros. C'est Enos Fuselier!"

"Who is Enos Fuselier?" I asked, incredulously.
"Je ne sais pas." Mama Dora answered.
"Where's Adros, did they bury him already?"
"Mais, non!" she answered indignantly. "He's not dead!"

"Well, where is he?"
"He's still in the hospital! He's still sick!"
"Do you want to go see him in the hospital?"
"No, let's go back to Oakdale."

There's a pine tree in the Catholic cemetery in Oakdale where my father is buried. It's got a wisteria vine that crawls all the way up to the top of it and in the spring when that wisteria blooms it's as pretty a sight as you'd want to see. That's where I want to go when I die. I want them to put me in a pair of Mickey Mouse flannel pajamas in a pine box. I want someone to sing "I know that my Redeemer liveth" from Handel's Messiah. I want all my friends and relatives to gather and have a good time. And I want them to plant me under that pine tree so I can help that wisteria grow and bloom.

Your friend, Joe Bacon

As Nature Intended

"Being naked approaches being revolutionary," John Updike told his Martha's Vineyard neighbors. "Going barefoot is mere populism." In the midst of the 1980s, being naked and unashamed in public still shakes the foundations of American culture. The crowd went wild when Disney's bare-assed mermaid appeared in front of the Statue of Liberty in the movie ***Splash****. Even sophisticated New Yorkers aren't quite ready for* ***that*** *kind of behavior.*

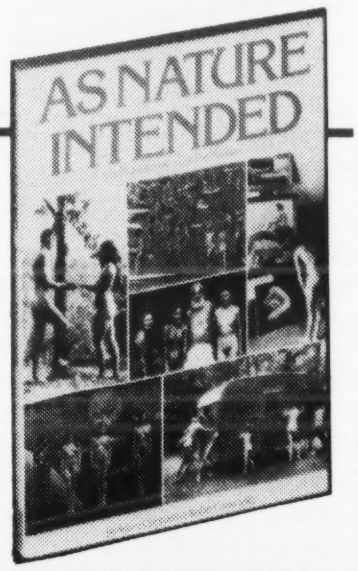
Looking back, it's possible to see the nudists of the 1930s as being part of an early wave of countercultural radicalism. ***As Nature Intended*** *is a delightful, illustrated history that tells the story of American nudism. Madison-the-mermaid wasn't the first "skinny-dipper" to stand naked in New York. Madison had some interesting forebears.*

—Martha Burning

•

The day begins with the Buff Divers, naked skydivers, parachuting into the swimming pool. Because of the harnesses and helmets, almost the only parts of the body on display are the very ones which more modest souls would wish to hide. Next comes the oath of allegiance to the American flag: three thousand naked people, chanting in unison, like a bizarre parody of some ancient rite. Then the hapless girl contestants parade themselves to gawking public scrutiny and clicking cameras in front of a tatty scenic backdrop which obscures the natural beauty beyond. Ms Congeniality, Ms Personality, Ms Nude International USA are chosen, crowned and garlanded to the whoops and wolf whistles of the crowd. The budding Misters Universe then parade their well-oiled bodies beautiful, the prerequisite all-over tan. The American Sunbathing Association, not surprisingly, frowns upon such antics and has now parted company with the Fun Ranch: ridicule has always been the nudists' worst enemy.

As Nature Intended
(A Pictorial History of the Nudists)
Adam Clapham and Robin Constable
1982; 118 pp.
$13.95
postpaid from:
Elysium Growth Press
5436 Fernwood Avenue
Los Angeles, CA 90027



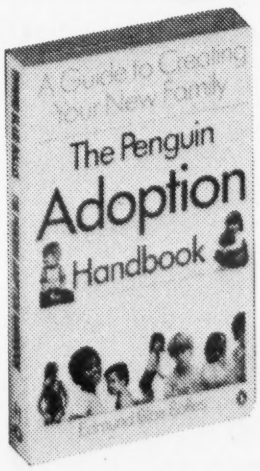
Keeping on the right side of the law.

The Penguin Adoption Handbook

In recent years, pressure from growing numbers of both family-less children and "unconventional" individuals who want to adopt has relaxed some of the institutionalized restrictions on adoption. The process is still archaic and bewildering, but it is now possible for almost anyone with a little endurance to adopt a child. ***The Penguin Adoption Handbook*** *is an indispensable guide through that process, for both the traditional "Ozzie and Harriet" couple and the untraditional hopefuls (single or divorced parents, gay parents, nonwhites, mixed-race couples, etc.). In addition to a thorough, readable discussion of adoption agencies, adoptive-parent organizations, independent and international adoptions, and foster care, Bolles explains adoption laws and their state-by-state variations, and provides an excellent directory of adoption offices, adoptive-parent associations, and other resources for each state.*

—Carol Van Strum

The Penguin Adoption Handbook
(A Guide to Creating Your New Family)
Edmund Blair Bolles
1984; 254 pp.
$9.95
postpaid from:
Viking Penguin Books
Direct Mail Order
Department AK
299 Murray Hill Parkway
East Rutherford, NJ 07073
or Whole Earth Access



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There is plenty of reason to object to the idea that no one is hurt when babies are sold. The exchange of money is not, of itself, a bad thing. A very likely change in adoption during the 1980s will be that the open payment of money to mothers by agencies will be allowed — payments for expenses, medical costs, and perhaps even some form of "recuperation allowance." Many perfectly legal private adoptions already include such costs, but when a transaction includes the payment of something extra — the baby's price tag — because "after all, there is a baby shortage," a poisonous element enters the process. At this point the baby becomes a commodity. The change is purely subjective, but then, families are subjective institutions. Not many people can pay $10,000 or $15,000 for an item and not have that price tag affect their vision of what they have bought.

•

To maintain a search that can last for years, you have to avoid turning your quest into an obsession. The point of an adoption is to enrich your life, not make it an endless cause for complaint. Persistence does not mean that every moment must be focused on adoption. Pick a weekday — say, Wednesday — and make that "Adoption Progress Day." That day can be the one you use to contact agencies and other sources. If you can keep up that pace for as many Wednesdays as it takes, you will be able to boast of your persistence and still keep from reducing your life to an unending struggle to adopt. . . .

Tell everyone you know that you are hoping to find a baby. Persist, persist, persist. People who try to take the adoption maze by storm soon grow tired and discouraged, but if you just keep working, you will win over the long run. If you have already approached every knowledgeable person and agency in your area, call them again.

Modern Meat

Some years ago, back in Michigan, my folks and I raised a few Angus cows for our own consumption. In the summer they wandered around eating grass. In the winter they stood around eating the superrich hay we grew, and towards the end of their lives, they got lots of our 42-pound/bushel oats, to supplement all that hay. They never got sick that I recall; at worst, one might turn up full of splinters from walking through a few fences (for fun).

Carnivore Orville Schell found the courage to take a close look at the . . . stuff . . . on the ends of our forks. His new book, ***Modern Meat****, documents current feed, medical, and growth-inducing technology as practiced in the production of the meat we eat. It's not much fun.*

Schell introduces us to a guy whose commercial cattle feed is made up of factory-second Fritos and misprinted waxed-cardboard boxes; to an experimental steer whose glass-walled stomach is full of shredded plastic "roughage;" to a few girls and boys, ages 1½ to 7, who got their fully-developed breasts and pubic hair courtesy of the growth-inducing hormones in meat and milk that caused an epidemic of premature pubescence — largely irreversible.

I still eat meat. Hell, I smoke 'n' drink 'n' stuff, too — what's one more poison. Glad I don't have kids.
—James Donnelly

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"I don't know what it is about putting a pig out here in the dirt," Lehman continues meditatively. "All I know is that after an animal gets out here, she often shapes right up and comes into heat. I've saved quite a few that way." He smiles and shrugs, acknowledging that there are still a few ineffable aspects to modern hog raising.

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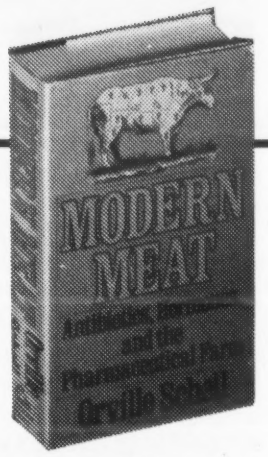
Reaching into the gurgling stomach of the cow (who stares at the wall in front of us with a total lack of interest), the graduate student pulls out a handful of half-digested, khaki-colored hay. He holds it out for our inspection. It steams in the cool air and drips on the floor. Then, like a naturalist returning an unfledged baby bird to its nest, he reaches back into the stomach of the cow and delicately restores the soggy handful of roughage to its proper place. . . .

Walking over to a second cow, the graduate student unceremoniously pulls out the second plug. The animal lurches and gives a wheeze. No sooner is the plug out than a sickly-looking gray froth, like dirty shaving cream, begins billowing out of the hole and splats in a bubbly cloud on the floor.

•

In Alabama, cattlemen are turning to another inexpensive recycled feed, what is called poultry litter, which is composed of manure, feathers and old bedding from henhouses, combined with molasses and grain to make it palatable. "It's hard to mix, it's dirty and it's smelly," Bill Beasley, an Ariton, Alabama, commercial "poultry litter" retailer told a *Beef Magazine* interviewer. "But there's one thing about it . . . cows love it. We sell about all we can put together."

Modern Meat
(Antibiotics, Hormones, and the Pharmaceutical Farm)
Orville Schell
1984; 341 pp.
$18.95
postpaid from:
Random House
400 Hahn Road
Westminster, MD 21157



or Whole Earth Access

Freelance Foodcrafting

Considering small business fatality rates, any type of new venture should be approached cautiously if at all. The gourmet and specialty food field is a better bet than most simply because it's growing so fast (about 20 percent a year for each of the last five years).

Shown's book is definitely upbeat on this score but it is also realistic. Anyone interested in starting a food business shouldn't miss it. *—Mary Grauerholz*

(Covers every possible way to make money from food except starting a restaurant.) *—Kevin Kelly*

•

One of the unusual aspects of catering, according to David, is that "there's a whole gradation of the ways people treat you. Sometimes you're treated like just a servant, and other times you're treated like the great artist in temporary residence." Of course, the way you're treated often reflects the way you act. "If you act like a servant, they'll treat you like a servant, and if you act like someone special, they'll treat you that way."

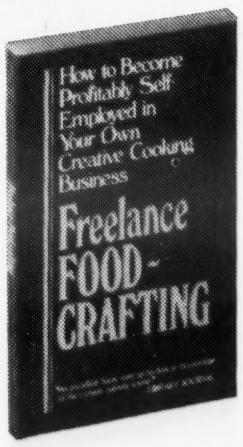
•

Gastronomic tours are a good way to take a vacation. (But watch out, says Peter Kump. You'll find yourself "on stage" from 12 to 16 hours a day!) You probably will never get rich from organizing tours, however. Peter Kump makes about 10 percent profit on each tour; others probably make less. But, Stan Levy says, the chance to make regular visits to culinary capitals is worth it, and it just may bring you enough profit to make the trip worthwhile.

•

Profits from pushcart vending largely depend on the nature of your product and the location of your cart, as well as the season of the year. An average day's sales in Boulder, Colorado, in 1982 ran about $150, with a good day bringing in over $300 for some. With low overhead and minimal supply costs, most of that is profit, but pushcart vending will never make you rich. If you're planning on making your primary income from pushcart vending, you'll probably need to place several carts around town.

Freelance Foodcrafting
(How to Become Profitably Self-Employed in Your Own Creative Cooking Business)
Janet Shown
1983; 172 pp.
$10.95
postpaid from:
Live Oak Publications
P.O. Box 2193
Boulder, CO 80306



Jessica's Biscuit Cookbook Catalog

Jessica's Biscuit *offers an excellent selection of cookbooks (over 1,000). These include: ethnic, international, and regional cookbooks; locally published cookbooks; vegetarian and other special diet cookbooks; food commentary and history; professional cooking texts and references; wine books; restaurant guides. If you like cookbooks, you'll love this catalog.* *—Walt Noiseaux*

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Box 301
Newtonville, MA 02160

The Termination Trap

Ever had that sinking feeling as you discover you are about to be fired? Assuming that you don't deserve to be fired, what's your next move? This manual takes you through a number of situations among which will likely be the one you are in. I found the author's method helpful and compared it to what has happened to me.

He starts where you begin to get signs that all is not well (or are you imagining things?). Then he proceeds to analyze the signs you are receiving, taking the employer's view. Next comes advice. The author is an M.D., so the advice includes suggestions for keeping your health under stress. I found some of it exceedingly clever. Some of the employer plots are worthy of a river-boat melodrama. (Come to think of it, we'd better keep this book out of their hands, hadn't we?) It's written well enough that I read the whole thing in one sitting even though I'm not under the gun these days. Am I, Stewart?
—J. Baldwin

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Know before you take the job or assignment just how well your boss can delegate authority along with responsibility. This can be done by asking to meet with other people who have worked under and above your boss. In many companies it is standard practice to have these interviews. Look closely at your interview for tiny behavioral clues abut the organizational styles. Are the people you meet punctual or late for your meeting, unusually neat or casual, responders or initiators, humorful or bland? Many opposites can be chosen for this analysis, but be sure to pick those qualities that fit with your style of working.

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Watch out if you find yourself resenting younger employees; this can be an early reversible signal. If someone brings in new ideas about how your job should be performed, and your response is anger and resentment, then at least recognize you have set your own Termination Trap.

Don't conclude that the threat is coming from those people with their new ideas. The threat comes from inside you and has very much to do with your attitudes, capacity for change, and stamina.

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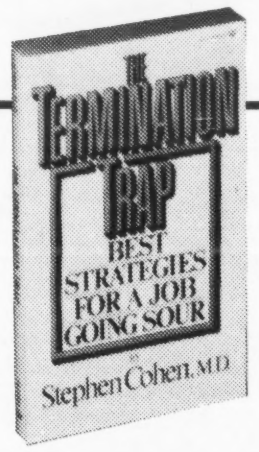
Some people are assigned many Impossible Dreams and are allowed to stay in favor as long as they are willing to earnestly attempt the tasks. This is a case where the doing is more important than the results. This happens very often in human service work (social work, medicine, physical therapy, etc.). It is very important to realize that if you speak openly about the impossibility in this situation you may seriously jeopardize your job. But remember that it is demoralizing and exhausting to repeatedly attempt to do the impossible. You might be unable to escape the feelings of failure even if no one else cares. In situations like this it is important for the management to figure out ways to nourish and support its employees or for the employees to devise formal or informal support mechanisms and/or groups.

The Termination Trap
(Best Strategies for a Job Going Sour)
Stephen Cohen, M.D.
1984; 224 pp.
$10.95
postpaid from:
Williamson Publishing Company
Box 185
Charlotte, VT 05445



or Whole Earth Access

The Rights of Employees

Surprise: American employees don't have many rights. Compared to other developed countries, which derive their labor laws from the feudal ethic, under which the lord is somewhat responsible for the serfs' welfare, the U.S. federal government offers employees very little protection and almost no opportunity to take part in running the business. That's because American labor law descends from contract law — both employers and employees can sever or alter the contract without penalty.

You can follow that history further in the first chapter of this excellent new handbook from the American Civil Liberties Union. (We recommended the rest of their legal-rights handbooks — for prisoners, women, tenants, and 24 other categories — on page 293 of the ***Next Whole Earth Catalog****.) The other chapters explain the murkiness of labor law in a relatively clear question-and-answer format. Discrimination is covered fully and clearly (to oversimplify, it's illegal in hiring and firing, but the burden of proof is on the employee). There are chapters on occupational safety and health, privacy on the job (you don't have much), sexual harassment, pensions, worker's compensation, social security, unemployment insurance, hiring and firing, overtime (federal law guarantees time-and-a-half for any hours more than 40 in a week), and unions. Little coverage of the various state laws.*

American labor law is changing to benefit workers more, but with glacial slowness. If you earn wages, you probably need this book — even if you don't realize why until after you read it.

This is not a confrontational book — it doesn't advise you to storm the barricades. It maps the existing barricades, and the gates and doorways in them. —Art Kleiner

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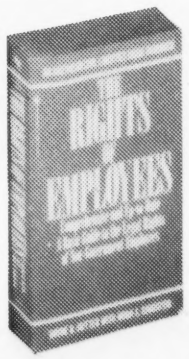
Under the First Amendment the police cannot prevent you from making a speech on a street corner in support of a presidential candidate, but your employer can prohibit the same speech if it is delivered on the shop floor. A private employer is not bound by the First Amendment when a speech is made on its property. An employer may even use, as the basis for a personnel decision, employee speech or activities that are unrelated to company matters and that take place off-hours away from company property.

•

Can a prospective employer require that I take a polygraph or psychological stress evaluator test?
In most states, yes. Polygraph and psychological stress evaluator examinations are used in the pre-employment screening process to check an applicant's honesty in answering questions, and to forecast the likelihood that the applicant will steal on the job, if hired. The reliability of such tests is in serious doubt, and they raise serious privacy problems. For these reasons, about half of the states have either restricted the use of polygraphs (and in a few instances, psychological stress evaluators) in the employment context, or required that polygraph examiners be licensed.

The Rights of Employees
(A Basic Guide to the Legal Rights of Non-Governmental Employees)
Wayne N. Outten with Noah A. Kinigstein
1983; 375 pp.
$5.20
postpaid from:
Bantam Books
414 East Golf Road
Des Plaines, IL 60016



or Whole Earth Access

A True Story

by Ron Jones

Grandma's Boy

"DON'T BRING A GUN in this house. There will be no guns in this house!"

My grandmother was adamant. I unbuckled my holster and placed the cap shooters on her doorstep.

"That's better," she offered.

Grandma lived down the block from our home on 46th Avenue. So I could visit her a lot. And I did, as often as possible. My mother used to call me "Grandma's boy" — and it was true.

Grandparents are fortunate. They are distant enough to be parents but also friends. And teachers. My grandmother was all of these. She was a petite woman who always wore an apron and was always having a cup of coffee. Grandma hated to have her picture taken and never talked about herself. She would, however, sit and talk about all manner of other things. She called it "kibitzing." So we would sit for hours, visiting and playing Chinese checkers. She could beat the tar out of me at checkers.

She smoked Chesterfields, and on occasion she'd let me go to the store and get her cigarettes. I'd run to the store as fast as possible and tell Carl Grandma's instructions — "just put the carton on the tab." I followed Grandma around like a puppy. When she turned to the dishes, I'd tie her apron strings in a knot. She'd threaten me with a switch she kept on top of the bureau. "Ronald Jones, I'm going to get me that switch if you don't untie that knot!"

Grandma was the black sheep of the wealthy Matson family because she married "Pop" Calof, a Jew. Their life together was a trail of poverty lighted by Pop's eternal dreams. He had style. Always dressed in the best pin-stripe suit with a red rose in the lapel. And plans. Always plans to "make it." He was in the curtains of show business. Had the idea to sell popcorn in "legit" movie houses before concessions were thought of. All he wanted was the "popcorn trade." The vaudeville and movie managers thought it unlikely and "inappropriate" for people to watch a show and eat — especially popcorn. So Pop watched as another of his ideas became a big business. And Grandma watched and cared after this giant of a man she had married. This dreamer. This dreamer waving his cigars like wonderful flags and flashing his diamond rings. This kindly man who lived a life of "almosts."

Grandma was a person of the Middle Kingdom. The center of civilized life. With one hand she

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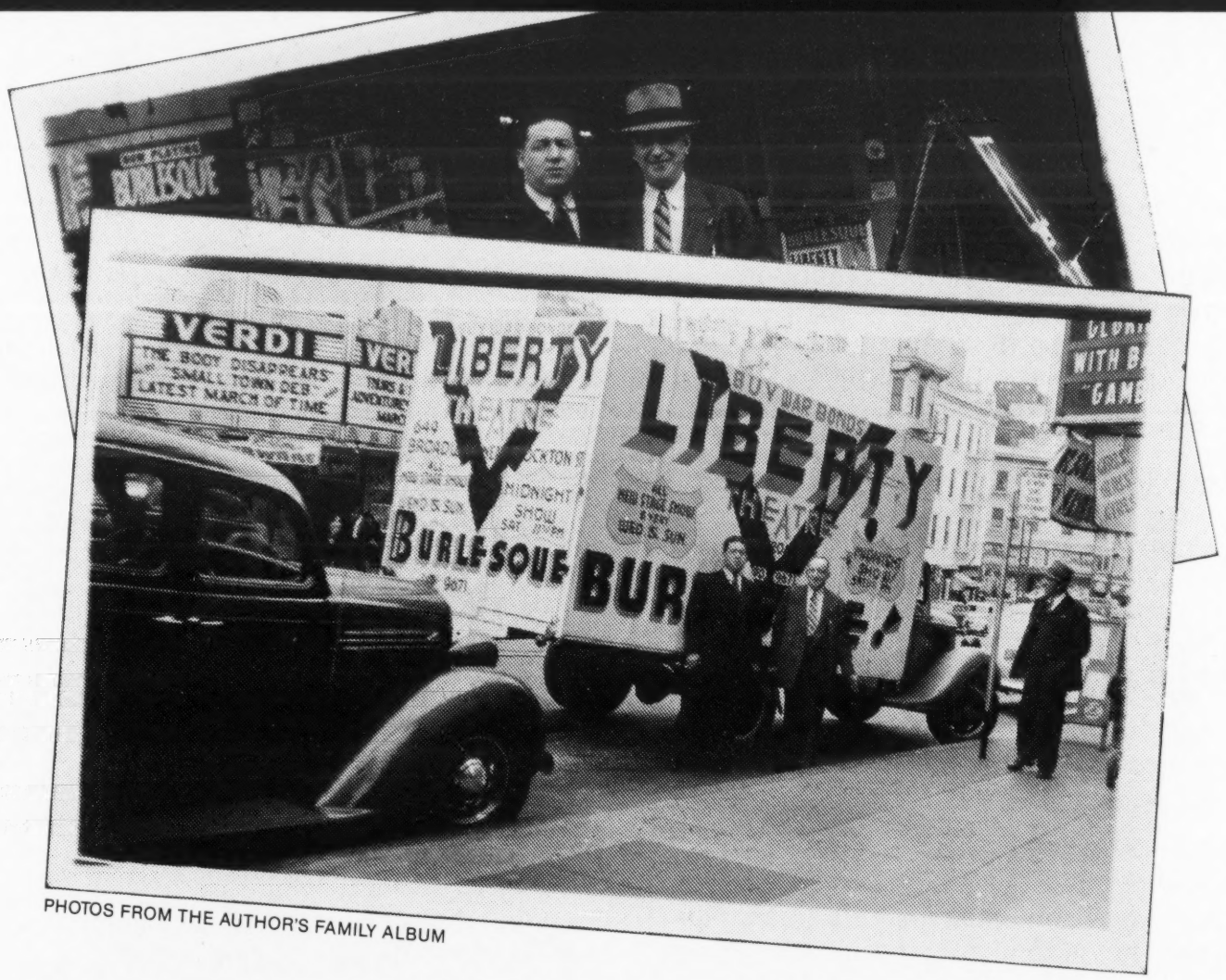
Another amazing-but-true, real life story by Ron Jones, his sixth in **CQ** *("Take as Directed," "Acorn People," "Winning," etc.). Second level of true amazement is that all Ron Jones' stories (30 so far) were originally self-published, and distributed among friends as booklets. All except one — his latest story,* Say Ray, *which has just been released between Bantam paperback covers. (*Say Ray, *Bantam Books, 414 East Golf Road, Des Plaines, IL 60016, $4.20 postpaid.)* Say Ray *is a "true detective story about a lot of inheritance money, some minor miracles, and a man who couldn't tie his shoes but could sing like Elvis." I got a cry out of it. Like two of his stories that appeared in* **CQ**, *this will probably end up as a movie on TV.*

Along the way Ron encourages others to self-publish their own stories. "I just go yep, yep, yep, you got to do it. I tell them not to remember what happened in English class." He's helped 20 so far. "Bantam wouldn't believe me that I wanted my address in the Say Ray *book. Write me and I'll help."*

Here's your chance to write an angel: Ron Jones, 1201 Stanyan, San Francisco, CA 94117. — *Kevin Kelly*



PHOTOS FROM THE AUTHOR'S FAMILY ALBUM

propped up a stargazer, and with the other she reached down to the bowels of life to offer a hand to the lost and bewildered. My mother told me stories of Grandma being the only one capable of going into the opium dens in Chinatown and pulling out "lost" relatives and friends. She was short and brassy and simply marched in where no one else would enter.

Pop managed burlesque houses in North Beach and Chinatown in San Francisco. He was known and loved on the street as a soft touch for a handout. Grandma was known under the streets as the Salvation Army. Now that I think about her and try to describe her, I'm amazed at how simple this should be. It was in her name. All along it was right there. Grandma's name was Grace.

Everyone called on Grace for help. She always had time to talk with someone having "their troubles." Although her home was small, she had a downstairs room where visitors could stay if they needed a place. One visitor stayed for twelve years. He came back from World War II "shell-shocked," whatever that meant. This visitor was a man without a family, so she took him in. He was a tall, gawky man with "little meat on his bones" and dark eyes set into caves. His ears were flappy and large, which seemed a contradiction to the fact that he had great trouble hearing.

Grandma called him Willie. And so did I. "Willie, come on up here and get yourself something to eat and help me untie this apron." She'd stamp on the floor and repeat her song, "Willie, come on up here and have a cup of coffee." Then she'd smile at me, "Like all of us, he hears what he wants to hear."

I was eight at the time. And nine, ten, and then eleven. And I remember Willie and Grandma as my best friends, along with Bobby Rivera and Powerhouse. Willie was with MacArthur in the Pacific, in fact landed with him in the Philippines. In many ways Willie was still fighting the war. His knotty pine room was covered with newspaper articles and magazine photographs of wartime operations. He had lived the fantasies of a nine-year-old. Knew all about Zeroes and P-38s and the Flying Fortress.

Willie often played checkers with Grandma and me, and when we weren't talking or playing checkers, we were having coffee with one of Grandma's callers. All the salesmen who walked the post-war Sunset District, the residential area where we lived, stopped at Grandma's for coffee. One of these callers I'll never forget. He was an Irishman who spoke through his bushy mustache, and every now and then his Irish tongue would get away from his saleman's mind. Of all the salesmen who came, he was the only one that Willie would talk with. With all the other visitors Willie sat petrified.

The Irish salesman was named Myron. "Not exactly an Irish name, now is it?" he'd joke. In fact, he told the same joke on every weekly visit. Myron sold brushes of all sizes. Grandma always bought one. "It's for the trip to Ireland," she'd say. Then she'd put the broom or brush in the closet with the empty Wizard Wick bottles. Once this nicety was played out, Myron would sit down and "join us for a cup."

Myron was the neighborhood historian. He knew all about the latest children to be born

and the deaths. About the fights and the squabbles and the "makin' up." About "those that cut their grass and those that don't bother." And "those that be leavin' their garbage cans out on the walkway." In many ways he was the keeper of the neighborhood, and my grandmother was his ally. On one visit he set off a chain of events that I'll remember for a long time.

"I THINK THERE'S A problem with Mrs. Mercheson, you know the lady I'm talkin' about, on the corner there. Well, now, I think somethin' is wrong."

As was the practice, once Myron started talking there was little room for Grandma or Willie or me, so we listened.

"I've been calling on her for, let's see, ten years — yes, that's it, doesn't seem that long — and, you know, I take her kit along that will keep her in food, that darlin' and her dog."

We looked at Myron and didn't have to beckon for him to continue. "So the last few times I've been by the house, you know, there's nay been an answer, don't even hear the dog barking, so I think the two of us should go over and look things over. You know, she's a frightened woman behind those bars of hers and, well now, Grace, you and me, we're the only ones she's about to talk with."

Grandma motioned for Willie to come along with her and Myron. She asked me to stay and "watch the house." Myron was continuing to talk as the three of them moved down the stairs to the street below. "Now my worst of fears is that the poor soul is dead, dead away, or about to get that way."

I watched as they disappeared down the street. Then went immediately to the basement. I peered into Willie's room. It was a rare chance to see where this man lived. And all his photographs of airplanes and tanks.

The best part of the basement, however, was under the front stairs. This is where Grandpa stored his dreams. There were always boxes of stuff and sometimes great treasures. I cherished the piles of glossy photos that were part of Grandpa's burlesque business. They were always on the bottom of some cardboard box.

On this day I opened a box of unexpected pleasure. The box contained what must have been one of Grandpa's "almosts." There were hundreds of them. Tiny pink and blue telescopes — only instead of stars, the image inside the eyepiece was a naked woman. Pure delight! The telescopes even had little chains, little gold chains — I guess Grandpa figured he could snap them onto a numbers board or put them in the popcorn as prizes. Or snap them on the beltloop of your trousers. Whatever went wrong with this dream, I applauded it. Jesus. Just look into the light and then turn the little devil, and the girl moves. I scooped up a handful of the trinkets, hoping to find a different girl in each window. A harem. Each scope had the same fascination. It didn't matter. She was beautiful. Better than any National Geographic "finds" by Bobby Rivera. I couldn't wait to take my discovery to school.

I dug deeper into the box. There, on the bottom of the box, was something shiny. Not the glossies I had expected, but something shiny. And scary. It was partially wrapped in a handkerchief; I knew what it was immediately. A revolver. A real gun. Nickel-plated, with a white pearl handle. And bullets. I could see them sticking inside the chamber. I had never seen a real bullet before. They were snub-nosed, not pointed like I expected, and the end seemed soft, like clay or solder.

I handled the gun carefully, tested its weight in my hand. Aimed across the basement at the washing machine — and pretended to shoot its legs off. Grandma's words haunted me: "I won't have any guns in this house." I wondered if she knew about this. I covered the gun with the handkerchief and placed it back in the box. Then I nervously refilled the box with its cargo of tiny peeper scopes.

IT TURNS OUT THAT Myron's fears about Mrs. Mercheson were premature. Mrs. Mercheson just refused to open the gate for Myron and as usual had not picked up her papers. Myron's concern for the old lady, however, resulted in my grandmother and me making weekly pilgrimages to her home. Grandma conditioned me not to be afraid and "don't be quick to criticize," that "Mrs. Mercheson has lived on this block longer than anyone can remember and once had family and friends. But now she just lives quietly and watches the world through her front window." My Grandma was right.

We stood ringing Mrs. Mercheson's doorbell for twenty minutes. When the buzzer finally sounded, we pushed open the gate and went up the stairs. Mrs. Mercheson was waiting for us at the slightly opened door. Grandma reassured her we were Myron's friends, and the final chain lock was unfastened.

On the outside her home was similar to Grandma's, but inside was a sight I had never seen or smelled. The house was filled with garbage. There were trails cutting through the refuse that led from the door to the kitchen,

down the hall to what I guessed was the bathroom. Mrs. Mercheson's dog was barking. The sound came from the living room. But I couldn't see in that room because the door was closed. The dog scratched against the door as Mrs. Mercheson glided to the dinette table and vinyl chairs. From this vantage point she could watch out the window. The venetian blinds were tilted to vent in the light and movement from the sidewalk below. She just sat there looking at us, while Grandma unloaded the boxes of cereal like the ones Myron had been delivering for years.

As she placed the boxes of Quaker Oats on the table, Grandma told Mrs. Mercheson "how nice out it is today" and "did she remember meeting Ronald, this is my grandson." And "Did you know that Myron was finally going to return home, to Ireland, that he would be back on his route for the last time, and wanted to stop by and not to worry because Myron has arranged for me to stop in once a week and make sure everything is all right."

Mrs. Mercheson didn't say a word. Her hands were gnarled and her hair danced outward. Red splotches covered her face. One eye looked closed. The other wandered around in constant search for something. I turned away as she noticed my stare. "The dog —" I questioned Grandma, asking if the dog was all right, and Mrs. Mercheson slapped her own face — dug her nails into her cheek. Then she murmured, "Can't trust anyone. The mailman tried to get in today, I saw him, yes."

Grandma reached into her purse and took out the bundle of news circulars and advertisements that had been stuck in Mrs. Mercheson's gate. She placed them next to the cereal boxes. The old woman picked them up and ran with them — opening the door where the barking came from and threw them in. Then slammed the door. The dog started barking again. "Insects, they're covered with insects. Didn't you see them, the mailman, those children are always running, ringing the door — didn't you see? Insects crawling all over."

Grandma walked with me slowly back to her white stucco house with the rose bushes out front and the clean carpets and furniture. She knew what was on my mind. "Myron has been taking care of Mrs. Mercheson for years, the best way he can. He is her only contact with the outside. She won't take help, and she is sure that someone is trying to kill her. She and her dog live there, it's a god-awful mess, isn't it? All she'll eat, her and the dog, is that cereal. That's the smell. It's terrible. Myron is worried that when he leaves she won't let anyone in."

Myron was right. He stayed for months trying

to wean Mrs. Mercheson of her dependence on his calls. He and Grandma took weekly walks to the old woman's home, then daily visits. She wouldn't let them in. They stood beneath her window with the bags of cereal boxes. She could see them and they could see her pinch open the blinds and then close them.

It was a dream that took over our life. Willie, Grandma, and Myron tried leaving packages, but they went untouched. They tried getting the police to enter the home and at least leave some food, but the police refused — they couldn't enter a home without signs of a crime or a warrant. Myron talked to a judge and then the local social service office. The social service worker agreed to open a case for Mrs. Mercheson, but to initiate this action, Mrs. Mercheson would have to give her a call. Myron tried the local SPCA. The agency wanted to help the dog but needed some verification of mistreatment. Everyone contacted agreed that something could be done but "it would take time."

MY VISITS TO GRANDma's became acts of frustration. The gun I had found in the basement was missing when I wanted to show it to Bobby Rivera. He didn't seem to mind. The eyepieces with the snap-on chains were still there as I had promised. It didn't bother Bobby that every eyelet had the same vista. He had to look at them all. Without the gun to play with, we started our bomb shelter.

At Francis Scott Key school there were monthly Atomic Bomb Drills. All the upper grades would walk quietly to the hallway. We'd get on our hands and knees and face the wall. Like Moslems facing Mecca, we bowed to the wall and covered our heads with our arms. We were warned never to look toward the windows at the end of the hall. Of course that's just where we all hoped to see the atomic cloud and bright light followed by a pressure wave. No one, not even Donald Sterns, knew what a pressure wave was. And no one ever asked. In the newsreels of the day they showed American GIs in Nevada standing in foxholes facing the atomic lights. Bobby and I knew we needed such a foxhole.

We started digging alongside Grandma's house in the backyard next to the door. We figured you could run out the back door and jump right in. For days we worked on our secret shelter. Grandma and everyone else in the house was trying to help the insect lady, so nobody paid any attention to our efforts. Bobby and I carried the extracted sand and dirt from our shelter to a vacant lot. We covered the entrance to our shelter with a sheet of plywood. The shelter was going to be a surprise for Willie and Grandma. When the hole got deep and over our heads we grooved one wall to form steps. The finished hole was eight feet deep and customized with comic-book provisions, peeper scopes, and a jug of water.

When a policeman came to Grandma's door I thought he wanted to know about or maybe inspect the shelter. Maybe he followed the dirt trail from the vacant lot.

Grandma knew better. "It's Mrs. Mercheson, isn't it?" she questioned the officer.

He said, "Yes, I understand that you are the only neighbor that sees, calls on her occasionally, and —"

Grandma asked me to get my coat before the policeman finished. When I balked she prompted, "I don't want you here alone."

The policeman continued, "Well, I was hoping you might know something about Mrs. Mercheson, about your neighbor. We had a caller this morning, reported that she was dead, and we verified this, and it appears like she's been shot."

Grandmother was listening and reaching into her coat closet for her red turban hat. She pinned it on while the officer asked, "Would you come over to the victim's house and tell us if you notice anything unusual? We can't locate any family for Mrs. Mercheson, and the next-door neighbors to the deceased were never in the house."

Grandma and I walked down the street with the policeman. Grandma held me by the scruff of the neck. She had never held me that way before. The iron gate to Mrs. Mercheson's tunnel-entrance house was ajar, and we went

up the stone stairs. I noticed there was no junk mail sticking in the metal gate or the customary pile of newspapers littering the passageway. I wondered if the policeman took note of this peculiarity. I bet myself that he didn't.

Grandma squeezed my neck a little as we entered Mrs. Mercheson's home. I looked at Grandma and then at the house. It was clean. Well, as clean as it could be. There were rings on the wallpaper that marked the tide of garbage and dog shit. But the piles of molding papers and rotting pulp were missing.

The policeman saw something else. "This place sure is a mess — looks like there was a dog kept in here. Did Mrs. Mercheson have a dog?"

"Yes," Grandma answered, "he died two weeks ago. Mrs. Mercheson's heart was broken."

"Did she let you in? I understand she was kind of eccentric," another officer in the house asked.

"She was afraid of everyone, and — and then with the dog dying, she —"

The first officer interrupted, "This is a strange one, all right. There's nothing in the house, just this kitchen and dinette table — no other furniture. We figure someone stole the furniture and she came across them and they shot her. Did you ever see the household goods?"

My grandmother nodded no. My mind photographed the empty rooms I had seen. Mrs. Mercheson — there was never any furniture. The officer kept talking, "It would help us to have a list — the appliances, TV, things like that."

The second officer, having recorded Grandma's turn of the head, asked another question, "We are trying to locate a Fuller Brush salesman that worked the Sunset, his name is Myron Deluch — funny name — did you know him?"

Grandma answered, "Oh, yes, I was one of his customers — have been for years. Yesterday he left for Ireland, retired, and went home after twenty-five years selling brushes."

As Grandma talked I scanned the empty house, amazed at the transformation. The trails through the house were gone. Curtains and venetian blinds long positioned to hold out the day were missing. Nail holes and punctures in the plaster marked their stand. Heater grills long submerged under pyramids of waste were visible. Doors that could not be opened for the piles of rubbish now hung freely.

In a way this dark and dank home was like a tomb suddenly cleared and opened to the light. It was breathing again. Even the smell of urine seemed to have evaporated. No, no — my eyes followed a new scent. There it sat on the window sill — a bottle of Wizard Wick. The wick extended, pouring perfume into the empty space. There it sat, right in plain view. An open Wizard Wick bottle. Didn't they see it? Right in front of their noses.

"You know, this is really a strange one. The woman found shot, when we found her, there was a clean sheet wrapped around her and she was wearing, well, wearing what looked like a new nightgown, Boy oh boy, the Sunset gets its share of weird ones."

I was still watching the Wizard Wick bottle. And waiting for the dog to scratch on the door and Mrs. Mercheson just sitting there like a queen, crazy queen of fear.

"If that's all I can do for you, I'd like to be getting home," Grandma said. The policemen thanked us.

Grandma walked quickly from Mrs. Mercheson's house, her hands now muffed in the pockets of her coat. I asked, "Grandma, what happened to Mrs. Mercheson?"

"Ronald Jones, you heard what the policeman said."

"Yes, but —"

"Mrs. Mercheson, God bless her, is finally at rest."

I WAS RUNNING AT THE mouth, fighting visions of Willie or Myron or even Grandma killing Mrs. Mercheson. "That old lady was crazy, deserved to die, treating her dog like that and eating nothing but —"

Grandma wouldn't let me finish. "Don't judge people so quickly or harshly — Mrs. Mercheson or any of us. You know she could, in her better moments, look out the window and tell the weather by the flight of the seagulls. If they flew inland it was rain. She was always right about that. And westward meant good weather. ! knew her when she was young and grew vegetables and had callers. She loved to dance, you know. Ballroom dancing. And she wore her hair up — it was so beautiful."

Grandma painted a lady I had never known. I remembered only that sight of a frayed person unraveling — a dog barking and scratching — a woman talking only of insects, not seagulls.

When we returned to Grandma's the hole in the backyard was filled in. I never touched the dirt in that patch of the yard again. Never. And when I think of guns I see only one gun — a silver-plated revolver hidden in a handkerchief. And when I think of killing I see seagulls and my grandmother crying. Always. ■

Land Wisdom

WHO SHALL INHERIT OUR

A talk by Wes Jackson:

I am very happy to be here at this mecca of sustainable agriculture. I've really had a good time. We don't have good times like this in Kansas. We just sit around and hurt. But then all of us Kansans, we intend to see God. We're in for the big *pay-off. Californians are just concerned about getting in harmony with the local eddies of the Cosmic breath.*

Now, more than you know, I'd rather give a different talk than this one. I'd like to talk about Amish agriculture, or perennial agriculture, or about small family farms and the possibilities of a sunshine agriculture. I'd like to talk about how all that fits in with moving the American land to run on sunlight. Instead, I feel I must talk about a developing problem in need of better definition, one that is going to require us to define the problem in the most precise way possible, organize ourselves in the best way imaginable, and do the kind of organizing that had to be done over Vietnam, in behalf of Civil Rights, and in our opposition to nuclear power.

"One more problem," you say, "when can we ever relax?" The answer of course is never. But to cheer you up, I hope to tell you at the end about a great opportunity that goes with the challenge.

In one respect it's unfortunate that such a conference as this must be held. As I see it, there are two generic reasons why such a meeting is necessary. The first reason is obvious: the problems that the industrialization of agriculture have imposed on us all and on the American landscape, and that's everything between The Unsettling of America *by Wendell Berry and* Hard Tomatoes, Hard Times *by Jim Hightower. Now if this problem were on hold, that is if the forces that brought us the unsettling and the hard tomatoes were simply an unfortunate piece of history, something that had happened and was now over, then we might consider ourselves to be at position zero, with nothing more to do than figure out where to go from here. It would be as though our house had just burned down and we were figuring what to do next; you know, clean up the ashes, examine the foundation to learn if the heat had weakened it, find out how much the insurance was going to cover, consult an architect, and build back. I really wish our problems developing a truly sustainable agriculture were so simple. If you've bottomed out, you know where you are and what to do next, and you can just get on with the process of rebuilding.*

Now unfortunately the forces that set the fire in agriculture are more than history. They are gathering momentum from the very heat that's been generated, and making the fire roar ever faster. Meanwhile, almost on the sidelines, there are that handful of us with our thimbles filled with water, trying to decide how much to throw on ourselves to keep cool, and how much to throw on the fire, cheering one another on the best we can. And as the unsettling continues, and hard tomatoes reward power, our opposition is looking around for more gasoline. They scarcely notice us thimble-toters, for in their minds, perhaps rightly so, we are still not a threat to their orgy of burning options. But we need to keep talking and working and thinking and be obedient to our vision of producing a sustainable agriculture for our land.

But it isn't this first problem I want to talk about. Of course, all of the environmental, social, political, and religious problems are interrelated, but it's the second generic reason that this meeting is necessary that I want to talk about now. And in order to properly understand what is going on I want to develop one of the historical threads leading up to what I think is the next major threat to agriculture, to the American landscape, and to our ideals.

Much of this historical thread was work that began in all innocence. Maybe no one foresaw in the very early days that future problems would develop. But since innocence is the clay of the Devil, we dare not ignore it.

[Following is the rest of the talk which Wes Jackson sent to us transcribed and edited.]

vs. Lab Success

AGRICULTURAL LEGACY?

"Aggregations of power" is really my subject here, for what I am about to talk about is an emerging problem for agriculture as the result of such aggregation. Much of it is within the university, some within the U.S. Department of Agriculture, and some within private industry. The story really begins in the mid-1940's but I am going to jump forward a decade because it makes more sense to do so.

In the mid-fifties, biology departments were mostly in small colleges. Unlike the universities and major colleges, most of them could not afford the luxury of separate departments of botany, zoology, entomology, and bacteriology. This was in the good old days of biology. Of course, schools with their separate departments *did* have problems. It was not unusual, for example, for botanists to refuse to speak to zoologists, and the other way around. Such fragmentation led students to believe that the differences between plants and animals were more fundamental than they are. There were some good things in this division. For example, it kept botany from being swamped by a pre-med program. But this separation came to a quick end as institution after institution placed all the disciplines under biological sciences or within a department of biology. Some universities did not collapse their departments under one empire, but most did.

This aggregation of power can be conveniently traced to 1957, the year the Russians threw the first Sputnik into the sky and sent a seismic wave through all of American science. We suddenly felt old-fashioned and in need of catching up with the Russians, so we spent more money on science education and research. Science programs expanded and the era of big science got a boost, literally, from a Russian rocket. This was the beginning of the end for numerous small subdivisions in biology. In a way, money did them in. To be honest, more than money was involved. Numerous professors promoted the *biological* argument that the difference between prokaryotes and eukaryotes was more profound than the difference between plants and animals. In other words, blue-green algae and bacteria were more different from redwoods than redwoods are from lions. The old distinctions between plants and animals were said to be too arbitrary.

There was other evidence coming in from other directions as well that began to make this division embarrassing to biologists. Animal ecologists were aware of the dependence of the animals they studied on the surrounding vegetation. For both animal and plant ecologists to be under the same organizing umbrella in the organizational structure of the university seemed to make sense.

So in the early sixties, the cracks began to widen in the rigid organizational structure of the traditional disciplines in biology, cracks that the academic deans worked to their advantage in academic empire building. They were *doubtlessly* tired of the squabbling among the various heads of botany, zoology, entomology, and bacteriology and by putting them all under one organization, the squabbles over budgets could be settled below the dean's office. Had there not been a charismatic Kennedy, a civil-rights movement, a Vietnam war, a proliferating counterculture, the public might have learned of this not-so-quiet revolution in the structure of biological learning and research. It may have made no difference that the public didn't know, but what was to follow was to have profound implications for those of us interested in sustainable agriculture.

And now we must consider another historical theme, of equal importance, a theme that would

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The people who brought you the Green Revolution are reaching the age of retirement. But they are leaving behind the old problems of an agriculture based on resource depletion. If genetic biologists replace them, their solutions will be technological fixes, which will fare no better than the Green Revolution did. One alternative to this scenario is called sustainable agriculture, and Wes Jackson and his Land Institute (Rt. 3, Salina, Kansas, 67401) are in the thick of it. This talk was originally given at the Ecological Farming Conference (P.O. Box 1394, Davis, CA 95617) held at La Honda, California in February 1984, and it unravels a few threads in the web of calamity that modern agriculture has become.

—Richard Nilsen

ALL PHOTOS COURTESY OF UNITED STATES DEPARTMENT OF AGRICULTURE

USDA researchers began mapping soil types in 1900. A device mounted on the buggy wheel counted turns to record distance. The completed rough maps would distinguish only 20 kinds of soil, compared to the 70,000 recognized now.

eventually intertwine with the one that I have just discussed and have a tremendous impact on biology — as, I am afraid, it will have on agriculture. We may say that this second theme began to develop in 1944, the year that Avery, MacLeod, and McCarty published the results of their experiments that suggested that DNA and not protein was the chemical responsible for heredity. Less than ten years later, in 1953, James Watson and Francis Crick reported that the structure of the DNA crystal was a double helix. They got the Nobel Prize they were after and DNA and double helix became household words.

The momentum for molecular biology, as a field, was now well underway. Many of these new biologists came out of chemistry. They did not come out of the tradition of biology. Most were not steeped in the biological lore, nor, I suspect, did most of them care to be. Avery, MacLeod, and McCarty, Watson and Crick came to be names that crowded out other names and other concepts in undergraduate biology courses as professors upgraded their notes and changed to new texts. Even though the budgets for scientific research and teaching were expanding during this post-Sputnik era, even though new buildings were being built to accommodate this growing scientific establishment of professionals and equipment, some of the traditional "schools of thought" suffered. Countless botanists were bitter because organismic botany, in particular, suffered. It was regarded as too descriptive. Not analytical enough. As many of the old plant ecologists retired, they were not replaced, and their labs were redesigned to accommodate the new, young breed of molecular biologists. After all, as one old scientist said, there was a "killing to be made on DNA."

I know what this fever was like, for as a graduate student in the sixties, taking a course in biochemical genetics, we would all wait with bated breath to read the most recent issue of the *Proceedings of the National Academy of Science* in order to learn what discoveries had been announced in the past month. We waited with fascination to learn how this language of life was arranged. I have to admit that it was a most exciting time in the history of biology to be alive.

During this fever, the budgets for scientific hardware went sky high. Electron microscopes, which can now cost half a million dollars, became absolutely essential, as did fast and accurate weighing equipment, growth chambers controlled by computers, etc. Department heads and deans had become responsible for multi-million-dollar empires. These managerial academics had the best of both worlds. Not only could they associate with the world of

high intellects, they could measure their worth in the prestige and importance that adhere to large budgets. They could compare themselves to the middle, if not the top, executives in major corporations.

For a quick study of this movement to expensive high technology in science, check the ads in the weekly journal *Science* over the last 25 years, and note the increase in technical sophistication and expense. Look, also, at the ads for positions available. "Cutting edge" science became very expensive. We have known it is costly to the practitioners and administrators, for such science becomes the fuel for hubris. By *hubris* I mean an increase in our penchant to "improve" the world by imposing our designs on it, designs which interrupt or interfere irredeemably with the designs of nature to which we have made little or no contribution. Few could have seen what the revolution in molecular biology would mean to botany. Hindsight is always 20-20, but we might have wondered where all those two- and three-year post-docs who were doping out the code would go once their post-doc was over? Of course the momentum was there to accommodate *them*. They had prestigious bibliographies. They had worked in the labs of Nobel laureates and near-laureates. They found good jobs in major universities. And since it is a monkey-see-monkey-do world, they, in turn, took the best graduate students available and put them to work on even more "cutting edge" science. But almost without notice, the era of discovery moved smoothly into the era of manipulation until, almost suddenly, we had new household words and phrases such as *gene splicing*, *gene stitching*, and *DNA surgery*. We were told early on and we are being told now that this new biology will help us cure cancer; that it will make temperate cereal crops full-blown nitrogen fixers when we stitch in legume genes to accommodate the nodule-forming nitrogen-fixing bacteria of the soil.

I have just described the revolution that went on in biology. What I have not yet described is the illusion of a revolution or a pseudo-revolution that went on in agricultural research. During this great change in biology, there was a tremendous change in the structure of agriculture world-wide, mostly because of yield increase. A so-called green revolution was taking place in Mexico, in India, in Asia. The casual observer might conclude that the revolution in biology was responsible for the revolution in agriculture, that they were proceeding in lock step to increase the food supply for a hungry world.

The two revolutions were, however, more or less independent. Yield increases were more the result of the widespread use of commercial fertilizer and irrigation and more use of pesticides. Crops were designed to be less discriminating in fertilizer uptake — in other words, the genetic mechanisms responsible for the orderly uptake of fertilizer were destroyed. We just regarded this "destroyed mechanism" in a positive way; we said that such plants had "high fertilizer response" genes. What is important to appreciate at this point is that molecular biology had little or no impact on agriculture. Increased sophistication in experimental design, because more researchers had understood the statistical models of Sir Ronald Fisher and others, led to a more efficient means of selection, an increase in the number of inbred lines, marker genes, etc. All in all, it was the establishment of the international research centers, the growing sophistication of some of the major seed houses, and the interaction of those companies with the geneticists and agronomists in the land-grant universities that brought on this so-called green revolution. Was it ever dramatic! In 50 years, the yield of corn went from a national average of 30 bushels per acre to 100. But it was not an era of discovery so much as an era of implementation.

Eventually, we came to the era in agriculture, in the mid to late seventies, in which an increase in fertilizer was not proportionally met by an increase in yield. The fertilizer curve line was going up and the yield line was flattening. Moreover, farm yields were coming closer to the yields in experimental trials. In other words, research results were no longer far ahead of field results.

It was inevitable that these converging lines would be noticed. Agricultural researchers would coast for a while on their past dramatic achievements, but lots of bright boys would point out that the technology that breeders had employed to bring about the record yields was about milked dry and that we should start now to implement the new science and technology that had been established in biology. This would give us a new knowledge base to exploit for the purpose of feeding an increasingly hungry world, and it would shore up our ability to produce for a future export market.

In June of 1982 there was a landmark meeting — a potentially dangerous one, I think. Dennis Prager, a physicist who started work as a policy analyst at the Office of Science and Technology Policy during the Carter administration, met with the Rockefeller Institute's John Pino. They and a few other people held a conference that summer at Winrock, Arkansas, and concluded that the land-grant institutions were lagging in their basic research and were therefore desperately in need of the new

knowledge in biology. The best work, they concluded, was being done outside the agricultural system. As a result, there is now a move to upgrade agricultural research.

In response to this high-level conference, the wheels of bureaucracy squeaked forward. Orville Bentley, a biochemical nutritionist and former dean of the University of Illinois agricultural school, is the assistant secretary for science and education in the USDA. He presides over the Agricultural Research Service, the Cooperative State Research Service (the agency that administers the Hatch Act funds), and the Extension Service. He was quoted in *Chemical & Engineering News* (11/22/82) as saying there is a change taking place that is more rapid than gradual. He says that "there will be a swing toward mobilizing our resources toward biotechnology, genetic manipulation. Two other important areas are resource utilization and protection of soil and water." But he goes on to say, "I still think the driving force will be efforts to increase yields, productivity and production as a way to keep the level of technology high." Bentley does say that there will be investigations into the feasibility of diverting some of the farm subsidy money, $7 billion or so, toward research and conservation but admits that that will involve a fight.

William E. Marshall, a biochemist who is technical director in the development sector of General Foods Corporation, has been studying federally-funded agricultural research as a member of President Reagan's Task Force on Cost Control. He contends that the best work is being done outside the agricultural research system, and he concludes that "what's needed is to bridge the gap between molecular biology and the future of agriculture."

During the past 20 years, the molecular biologists who were taking their post-docs during the sixties have professionally cloned themselves. The modern-day descendants of the new breed in the sixties, like their predecessors, may never have had a field biology course, never milked a cow or goat, maybe never driven a tractor. But they are looking for work. There are only so many pharmaceutical houses, only so much interferon to be made, only so many who can work at tricking bacteria to make insulin. There they are, credentialed, knowledgeable of the equipment, toned up on the literature, ready to roll.

What they have in mind is currently limited, but the future is boundless. They plan to turn grasses, for example, into plants that will fix nitrogen as readily as some of the major legume crops. They hope to introduce genes for resistance to various insects and pathogens. They hope to boost yields. Sounds good, doesn't it? Their agenda for agriculture is difficult to argue with. They are presenting a world of the future that makes one think that one is watching the upbeat ads during the Superbowl. But it is clear that what they are doing is trying to write large the last 50 years of agriculture. They are offering the "specific problem-specific solution" approach as the infallible recipe. This approach assumes that everything outside the specific problem for which they intend to splice in a solution can be held still, that nothing else will wobble, or if it does, that they can splice in a correction for that, too.

All of this is high-tech research and you can bet your bottom dollar that any outfit that gives you a crop with a spliced-in gene is going to demand a patent and some kind of a royalty payment. It is doubtful that their primary concern will be the high energy cost of American agriculture. One also doubts that they will care greatly about the national and global soil loss problem.

Of course, agriculture needs very little of what molecular biologists have to offer. But none of us want to be merely against something; we want to be for something as well. We are fortunate, then, that another kind of change which offers some possibilities has been going on in biology, a change that has scarcely been noticed, and one that can help agriculture but will not do so automatically.

It comes from a synthesis of several fields, from people who have had various motivations. They are taxonomists, ecologists, and geneticists, and they have been putting together a new synthesis, in fact a new field that might be called, for want of a better name, population biology. The primary contributors to this field have been plant ecologists and population geneticists, people with interests in evolutionary biology. They study the strategies that species employ to survive and multiply on the land. They study source-sink relationships in the production and allocation of energy in plants: does a plant send the harvested sunlight to the seed or to the root to overwinter? They study senescence in plants, the mechanisms of interaction among plant species, the diversity and natural dynamics of populations. They are interested in weeds as colonizing species, insect interactions, and the role of pathogens.

Especially in the U.S., these researchers have been just as interested as the "cutting edge" scientists in molecular biology in accumulating this knowledge for its own sake. One difference, of course, is that the pharmaceutical houses have little use for population biolo-

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An early cotton picking machine is put to field trials by two USDA researchers about 1935.

gists, who can't make insulin or interferon. None of these professors will be invited to join a new company like Genentech with a starting salary at $100,000 per year with all sorts of stock options. Some of the motives of these population biologists, ecologists, etc., may be the same as those of the molecular biologists. Too many have used their degrees and their bibliographies as passports to privilege rather than responsibility. Nevertheless, they are more in the tradition of the long-distance runners in research than they are like the sprinters in molecular biology. Their roots are in traditional biology. They can trace their academic ancestry back to many of the old names in biology. They know the lore of their heritage in the long tradition of biology, the kinds of things you pick up around a department, up and down the halls. They know the work of Asa Gray, Bessey, Weaver, Clements, Stebbins, Dobzhansky. Charles Darwin and Liberty Hyde Bailey are part of their being.

The work of these plant-population biologists or ecologists is admittedly still at the "knowledge for its own sake" level. But they are working so high above the individual gene that the nature of their research is fundamentally different from that of the molecular biologist. What they have accumulated and what they have to offer is what those of us interested in a sustainable agriculture need to pay attention to, for the sustainable agriculturist begins with the notion that agriculture cannot be understood in its own terms — that it comes out of nature. The test for this is the question whether a crop plant should be regarded more as the property of the human or as a relative of wild things. If it is viewed primarily as the property of the human, then it is almost wide open for the kind of manipulation molecular biologists are good at. If, on the other hand, it is viewed as a product of nature primarily, as a relative of wild things, then we acknowledge that most of its evolution occurred in an ecological context, in a nature that was of a design not of our making. I want to underscore the fact that the scientists who study this are at the other end of the spectrum from the molecular biologists. They may admit that humans learn faster than nature but they acknowledge also that nature is hard to beat because she has been accumulating information longer. Most of the mistakes of nature have been corrected over time.

Rather than embrace gene splicing, the agricultural research can benefit more from this inherently broader tradition. A new agriculture must come from people who are students of nature at the ecological level. For after all, a natural ecosystem, like a prairie, sponsors its own fertility, recycles its nutrients, avoids the epidemic from both insects and pathogens, and does not lose soil beyond replacement levels. People who make it their lifetime occupation to study the kinds of eco-

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A soil scientist in the late 1950s sketches soil type boundaries on an aerial photograph after making ground probes.

systems that feature all these elements of sustainability will have to be moved from the pursuit of "pure" knowledge. We must ask some of them to turn their heads and hearts to work with us in the development of a sustainable agriculture.

Our first task is to say *no* to the imperative of molecular biology. We must not allow it to horn in on agricultural research, only to increase the size of the production-only Leviathan. Secondly, we must encourage and aid the resistance of the current researchers in agriculture who resent this intrusion of molecular biologists into agriculture. Third, we must work on the other breed of "pristine" scientists in the biology departments — the physiological ecologists, the population geneticists, population biologists, evolutionary biologists, biosystematists, and the rest of the biologists — and let them know that we think it is time for them to begin the difficult task of working in the area of ecosystem agriculture. Nature can work to our advantage in agriculture. Some work of this kind is already going on. We all know about the work of Rodale in Pennsylvania, the work of Richard Merrill of the Portola Institute in California, that of John Jeavons at Willitts, California, the permaculture work of Bill Millison, Fukuoka's work in Japan, and Sir Albert Howard's work in India early this century. Steve Gliessman is now working at Santa Cruz, Miguel Altieri at Berkeley, and we are at work at The Land Institute in Kansas.

But all of us have just begun. We need to take the ecological knowledge that has been accumulating for the last 30 years or so, and think on its applicability to agriculture. It is going to take a concentrated effort to move this knowledge into the Agricultural Research Service of the USDA, into the land-grant institutions, and, most importantly, onto the farm.

What those of us interested in sustainable agriculture need always to keep before us are the questions: How are we going to run agriculture and culture on sunlight? What are we going to do when the oil is gone? What are we going to do to stop soil erosion? Ecosystem agriculture has answers to all of these questions. Molecular biology has few or none.

It might be argued that the fields of population biology and ecology are so complex and that so little is known of living things and the physical-chemical world that surrounds them that to concentrate at the ecosystem level, rather than at the population or organism level, will be impractical. Work at the ecosystem level could get argued down even if our goal is to save soils, prevent chemical contamination of the countryside, and get farms to sponsor their own fertility and energy. The argument could be made instead that the payoff from the likes of gene splicing is so sure

and so promising for solving the immediate problems of agriculture and that molecular biology is mature enough that we should get cracking now. Conventional wisdom may hold, in other words, that we should go with our long suit.

I don't think so. The synthetic fields of population biology and ecology are just as mature. They haven't received the same amount of media coverage. They haven't been featured in *Time* and *Newsweek*. But consider the barriers molecular biology must overcome to be able to deliver on the promises that have to do with production only, promises that never include the notion of sustainability.

With few exceptions, and they are exceptions because of certain anomalies, the gene-splicing work to date has featured the relatively simple prokaryotic organisms, the bacteria and their associated viruses. Such organisms are several orders of magnitude simpler than the kinds of cells nature has used to make redwoods and lions, lilies and people, and with the help of humans, corn plants and Holsteins. For gene splicing to be useful at this level, there must be a method of incorporating the gene into the entire genetic complement of the recipient species. This will be no small trick, but let us assume that it can be done.

First off, the team of molecular biologists must know what gene or genes they want to transfer from one creature to another. Next, they must find a source. Then they have to be able to extract the small amount of DNA representing that gene or genes out of the rest of the DNA in a complex cell. So far, maybe so good. What if the transferred gene fails to work in the new environment? They will have to find out why. Most of the requirements necessary for that gene to function in its new and alien world will be unforeseen and unforeseeable. Furthermore, it is unlikely that the newly-modified genome (all of the old gene material of the host cell, plus the newly introduced material) can be easily propagated.

So much for the easy part. I call it easy because it involves the most straightforward kind of manipulations imaginable so far. Now for the hard part, the more formidable problems. Because all genes interact to some degree, the traits that are *strongly* influenced by several genes working together will stand as a barrier to the gene splicer. They are still beyond the current state of the art for gene splicing. Professor Dick Richardson, a geneticist at the University of Texas at Austin, points out that some traits such as "growth rate" are affected by many hormones, including episodal ones that are present for short periods of time in low concentrations. Many of these are only now being discovered. When their existence is known, isolation may begin, but if the genes are from widely divergent organisms, their regulation may differ in the new host and fail to work as planned.

Professor Richardson reminds us that a gene is often separated into several pieces and located in widely separated places on the chromosome or even on another chromosome. While this is a tricky problem to overcome, it is no more tricky than isolating the various genetic components that regulate a particular gene in question. Once a complete gene and all of its regulators are isolated, there is the problem of the entire assembly becoming precisely incorporated into the genetic material of the recipient organism. If it isn't incorporated early enough in development and misses being transferred into the germ line so it can be transferred to the offspring, for all *practical* purpose it is a dead end.

Let us assume that all of the barriers to the present have been overcome. We are now faced with a problem somewhat similar to what geneticists confronted nearly 40 years ago, during the heyday of radiation genetics. This was a time in which numerous geneticists believed we could improve crops and speed up evolution by irradiating the germ plasm and then selecting the desirable products. What that generation of geneticists and plant breeders learned is that they had on their hands the same problem as the previous generation of geneticists who had believed that some biological wonders could be pulled out of the progeny of some very wide crosses. The problem they had was how to get rid of all the variation they suddenly found on their hands, and how to *reoptimize* the desirable traits against such a scrambled genetic background. The background of spliced-in genes may not be so scrambled, but the problem of reoptimization is still there. In other words, even if all the steps are taken successfully up to the point where the spliced gene and its regulators from a distant plant family are successfully transferred, an untold amount of breeding work remains before the genetic background is shaken down enough to accommodate the newly introduced trait and its regulators.

The ecosystem level of biological organization is complex, much more complex than the DNA level of any species, but it is not necessarily more *complicated for the human*. For that matter, the level of the molecule is more complex than the atomic level but molecular biology as a field is no more complicated than physics as a field. At the ecosystem level, if researchers and farmers take advantage of the natural

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In 1949 a researcher at the USDA Plant Industry Station in Beltsville, Maryland, monitors radiation levels in plants grown in radioactive solutions.

integrities that have evolved over the millions of years, they may be dealing with great complexity but it may be much less complicated for the human than gene splicing at a much less complex level of biological organization. Ecosystem researchers will simply be dealing with huge chunks or blocks of what works.

The point is, if we continue to lose soil, if our soils and groundwater supplies continue to be polluted because of our single-vision focus on production, the day will come when few will care whether molecular biology ever existed as a discipline. There is enough "on the shelf" knowledge now, all in the area of population biology, evolutionary biology, and ecology, to begin to meet the needs of the land and the needs of this species of ours, that was shaped by the land.

Why have we been so slow in getting started? Well, such an ecological agriculture was really not possible until the last ten or fifteen years, until the great synthesis began to emerge, until sufficient knowledge about the workings of natural ecosystems had been discovered.

We still have a great opportunity to do something about the problem of agriculture, but we have little time in which to take advantage of that opportunity. Right now, the average age of agricultural researchers is in the mid-fifties, about the age of the average farmer in America. This means that in the next five to fifteen years, a lot of agricultural researchers are going to retire. 60,000 professional slots will open in agriculture next year and there are only 52,000 people trained to fill them, a deficit of 8000. There will undoubtedly be deficits in subsequent years, as well. What this means is obvious — if we can get people trained in ecological agriculture, we could change the structure of American agriculture very fast, for in another ten to fifteen years, many of these people would move into positions of responsibility. If we fail to produce enough students of ecological agriculture, then molecular biology will win the day.

Numerous problems still lie before us, but the day may not be too far off when scientists who have been studying natural ecosystems will begin to talk to farmers as equals and when farmers and scientists will join together in the common task of learning how to live *decently* on the land surface of the planet and make a *decent* living while doing it. We should acknowledge what molecular biology does have to offer sustainable agriculture. It won't be much. We next have to use whatever energy we can to tilt future agricultural research toward an ecological emphasis. That will be tough because powerful interests are becoming more aligned with exploitative agriculture as each day goes by. ■

Agroecology

A good way to further explore the dimensions and prospects of sustainable agriculture is with the book ***Agroecology****. This collection of scientific papers awaits a publisher to combine them with the author's extensive collection of color slides into a book that will really sparkle. But this edition can be had now, and it is amazing how much of it is not discovery but rediscovery. Primitive cultures the world over have been practicing sustainable agriculture or agroecology all along, and the fact that they are still there doing it is proof that it works. What once was thought to be backward or quaint is here shown to be wise, resilient, and efficient.* —*Richard Nilsen*

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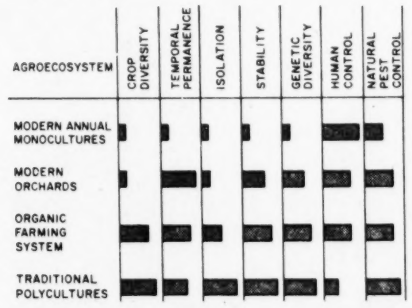
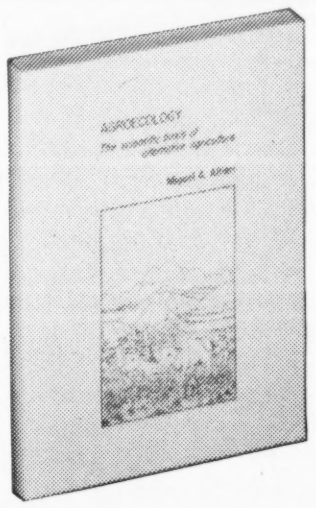
The scientific discipline that approaches the study of agriculture from an ecological perspective is herein termed "agroecology" or "agricultural ecology" and is defined as a theoretical framework aimed at understanding agricultural processes in the broadest manner. The agroecological approach regards farm systems as the fundamental units of study, and in these systems, mineral cycles, energy transformations, biological processes and socio-economic relationships are investigated and analyzed as a whole. Thus, agroecological research is concerned not with the maximization of production of a particular commodity, but rather with the optimization of the agroecosystem as a whole. This tends to refocus the emphasis in agricultural research away from disciplinary and commodity concerns and towards complex interactions among and between people, crops, soil, livestock, etc.



Ecological patterns of contrasting agroecosystems.

Agroecology
(The Scientific Basis of Alternative Agriculture)
Dr. Miguel A. Altieri
1983; 173 pp.
$11.50
postpaid from:
Dr. Miguel A. Altieri
Division of Biological Control
University of California, Berkeley
1050 San Pablo Avenue
Albany, CA 94706
or Whole Earth Access



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To maintain normal levels of productivity on a short and long-term basis, modern agroecosystems require considerably more environmental control than organic or traditional agricultural systems. Together, all the subsidies to "run" the modern systems require large amounts of energy from outside the system to accomplish the work usually done by ecological processes in less disturbed systems. Thus, although less productive on a per crop basis than modern monocultures, traditional polycultures are more stable and more energy efficient. For example the energy efficiency ratio (yield/cultural energy input) of a California sugar beet system is 0.8, whereas in a shifting cultivation system of Thailand the ratio is 18.0 (Cox and Atkins 1979).

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It seems that by encouraging the presence of specific weeds in crop fields, it may be possible to improve the biological control of certain insect pests (Altieri and Whitcomb 1979). Naturally, careful manipulation strategies need to be defined in order to avoid weed competition with crops and interference with certain cultural practices. In other words, economic thresholds of weed populations need to be defined, and also factors affecting crop-weed balance within a crop system should be understood (Bantilan et al. 1974).

Experiments in Bioregionalism

There have been two parallel bioregional movements in North America: the populist and the governmental. ***CQ*** *has given the embryological beginnings of populist bioregionalism its strongest support and broadcast system. Sometimes we forget that for over 30 years many others have tried to work within the system to create river basin authorities that cut across state and county boundaries.*

Government bioregionalists deserve attention. At some point, the populist movement will need to join them.

Charles Foster was a commissioner of the Massachusetts Department of Natural Resources, president of the Nature Conservancy, and dean of the Yale School of Forestry and Environmental Studies (perhaps the best forestry school around). He has a deep understanding of New England's bioregional personality and how natural boundaries must always mesh with cultural traditions. Here are some of his insights in this highly detailed and scrupulously researched tome. —*Peter Warshall*

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There is a certain frugality and thrift in the New England judgment. Issues will often be weighed not by what is to be gained, but more by what may be lost. Call it caution, conservatism, or even provincialism — this attitude tends to militate against the sudden venture, the fanciful whim, the careless action.

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A cardinal principle for most bioregionalists has been the matter of ecological integrity. It is considered important, for example, that the entire watershed of a river system be included within the jurisdiction of the managing agency . . . Far more important than technical ecological integrity would seem to be a sense of regional belonging on the part of people living within the area. Without that essence of regional consciousness, no bioregional entity has a chance of succeeding.

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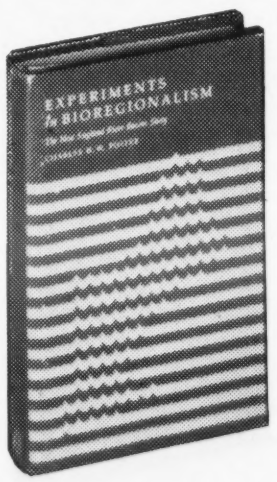
The scale of a prospective bioregional entity is worth examining carefully. It must be large enough to dwarf jurisdictional differences, yet small enough to encourage focused, implementing actions. It must have sufficient critical mass to be economically and politically viable, yet also seem manageable to its participants. Questions of scale apply equally to the bioregional institution itself. For example, it must have enough staff and budgetary support to function effectively, yet not be so large as to represent a drain on or a threat to its constituent parts.

Experiments in Bioregionalism
(The New England River Basins Story)
Charles H.W. Foster
1984; 240 pp.
$24
postpaid from:
University Press of New England
Three Lebanon Street
Hanover, NH 03755



The Granite Garden

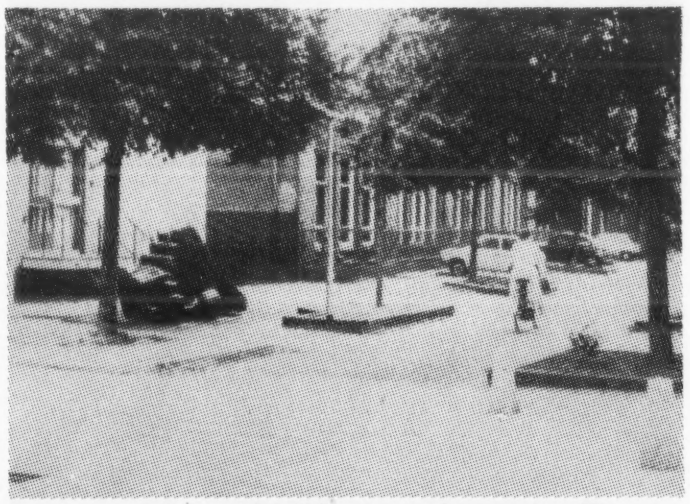
Very much in the tradition of Jane Jacobs, Ian McHarg and Christopher Alexander, this author examines the role of nature in cities, focusing on air, earth, water and plant/animal life as they relate to the urban environment. The critique here is easy pickings, because cities, whether severely planned or done laissez-faire, almost always end up wrong. The value of this book is in its balance between problems and solutions, which come as far and near as Stuttgart, Germany, and Dayton, Ohio. Spirn quickly makes it apparent that healthy, workable answers to the dilemma of urban designs are not scarce commodities — techniques abound. What is lacking is economic and political will, and enough of a sense of tradition to allow for perseverance. —*Richard Nilsen*

•

The Dutch have developed a new type of street, the ''woonerf,'' that enhances the social role of the residential street. The woonerf (''residential yard'' in Dutch) is a precinct with its own traffic rules: children and adults have precedence over cars and they use the entire roadway; cars must drive at a walking pace (about ten miles per hour). In the woonerf, distinctions between street and sidewalk are eliminated, and the resulting street space is shared by cars and pedestrians. The woonerf originated in Delft, where conventional streets were transformed by repaving them to eliminate curbs, by introducing obstacles like mounds, raised planters, and trees which forced drivers to wind their way around them, and by consolidating parking. The Dutch have created 800 woonerven in 200 cities and there is a long waiting list for future conversions.

•

Parking lots, which account for much of the open, paved land in American cities, can also be designed to detain or even retain stormwater, as one was at the First National Bank in Boulder, Colorado, where a section of the lot can hold up to two feet of water. Consolidated Freightways in St. Louis, Missouri, constructed its parking lot to detain storm flows and netted a $35,000 savings in the cost of the storm drainage system.

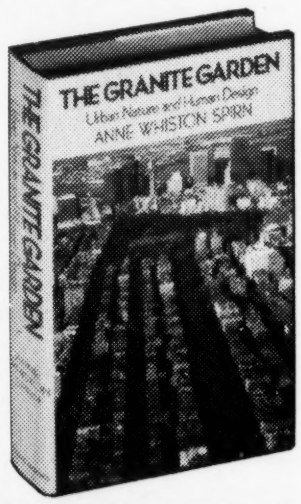


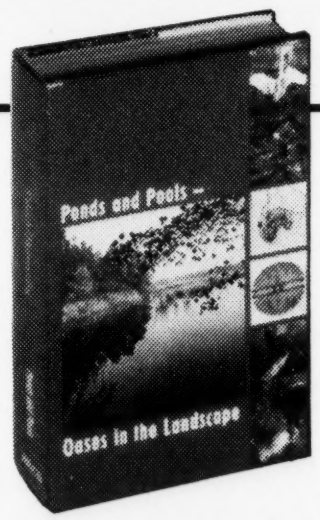
Dutch woonerf, a residential street with special traffic regulations where cars share the street with people and gardens.

•

Although birds can fly from patch to patch, they rarely do unless the islands of attractive habitat are large and connected. The number of species of breeding birds declines drastically from the rural fringes of a city to its downtown area. More than ninety bird species breed within a 24-kilometer (14.9 miles) radius of Manchester, England, yet only six bird species breed in the city center, and the number increases very gradually with distance from downtown.

The Granite Garden
(Urban Nature and Human Design)
Anne Whiston Spirn
1984; 342 pp.
$26.95
postpaid from:
Harper & Row Publishers
2350 Virginia Avenue
Hagerstown, MD 21740
or Whole Earth Access



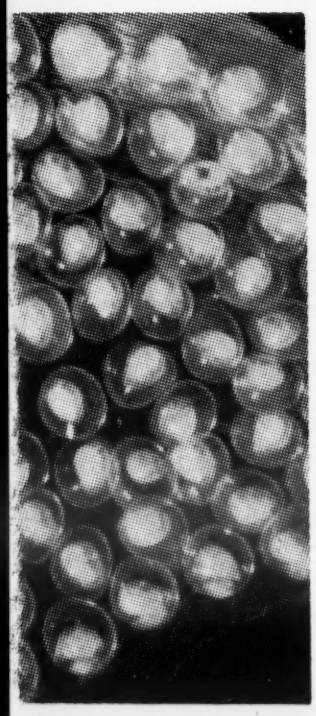


Ponds and Pools
(Oases in the Landscape)
Klaus Kabisch and
Joachim Hemmerling
1982; 260 pp.
$15.95
postpaid from:
Arco Publishing, Inc.
215 Park Avenue South
New York, NY 10003
or Whole Earth Access

Ponds and Pools

Ponds make for a slippery subject. Pond politics involve wetland protection, acid rain, hydro-development and skinny dipping. No one has yet come up with a hermetically sealed single volume opus on ponds, and probably never will. Nevertheless, Kabisch and Hemmerling have done an admirable job of consolidating this 3-D topic and illustrating it with vivid photos. It's the best roundup reference on pond culture I've seen. Don't let the East European accent throw you (metrics, deutschemarks, and German references) — these people have been digging and restoring ponds for a thousand years.

—*Tim Matson*



Eggs of the great ramshorn snail ***(Planorbarius corneus)***

•

Before the cold season begins most water bugs, waterboatmen, corixids, water beetles and other insects able to fly search for ponds with an abundance of vegetation where they will find the essential supply of oxygen, even during the winter. As long as light can penetrate the covering sheet of ice, carbon dioxide assimilation of the underwater plants continues. Thus, there is no scarcity of oxygen for respiration. The oxygen bubbles which collect just underneath the ice serve as good ''gas stations.'' In severe winters, however, when the pond is closed off from atmospheric air for a long period, conditions may deteriorate drastically so that many of the wintering insects and aquatic animals are killed. Although such extreme conditions are possible they do not occur in all waters. For instance, the life in ponds with a regular inflow and outflow of water is much less endangered in this respect.

•

Compared with the yield of fish, commercial exploitation of reeds and rushes has far less economic importance. In the past the extent of the use made of these natural materials varied. Anyone who wishes to explore this subject in greater detail will gain an interesting insight into a piece of cultural history. . . . In some European countries the practice of thatching roofs with reeds is experiencing a virtual renaissance . . . Many inns and restaurants use reeds for thatching roofs and furnishings to give them an attractive country style. Reeds not only provide a cheap building material but have other advantages as well. These include durability and good insulation from heat and cold. A roof thatched with reeds may well last for forty to fifty years (maximum 80 years).

Mushroom: The Journal of Wild Mushrooming

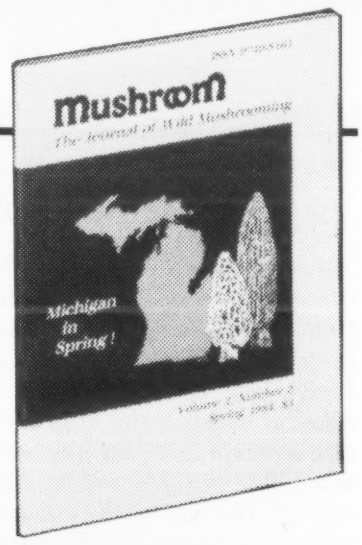
As my friend physician Andrew Weil has said: "Mushrooms can push up asphalt, unhinge the mind, kill, and permeate the darkness with eerie, heatless light." They also bring truffle heaven to the palate and spiritual discipline to the fungus-finder. This magazine has it all: best children's books, best postcard collections, best identification keys, best locations to forage, latest news and recipes . . . all myco-mania for the mycophiles of this mycotudinous planet. —*Peter Warshall*

•

Jon Buller, Lyme, Conn.: "The Morels always come up around my birthday, May 7th. Mushroom hunting in the spring here is hit or miss. My eyes are sharp in the spring, so I used to have real success, and I 'advertised' Morels to my neighbors. I've done all this great public relations for Morels, and now I never find them. My neighbors come in with baskets of them, and show them to me, and there it is . . .

"My best story? My wife went to a 'tag sale.' I think you call them yard or garage sales out in the West. She found lots of Morels in the yard. I should have gone with her."

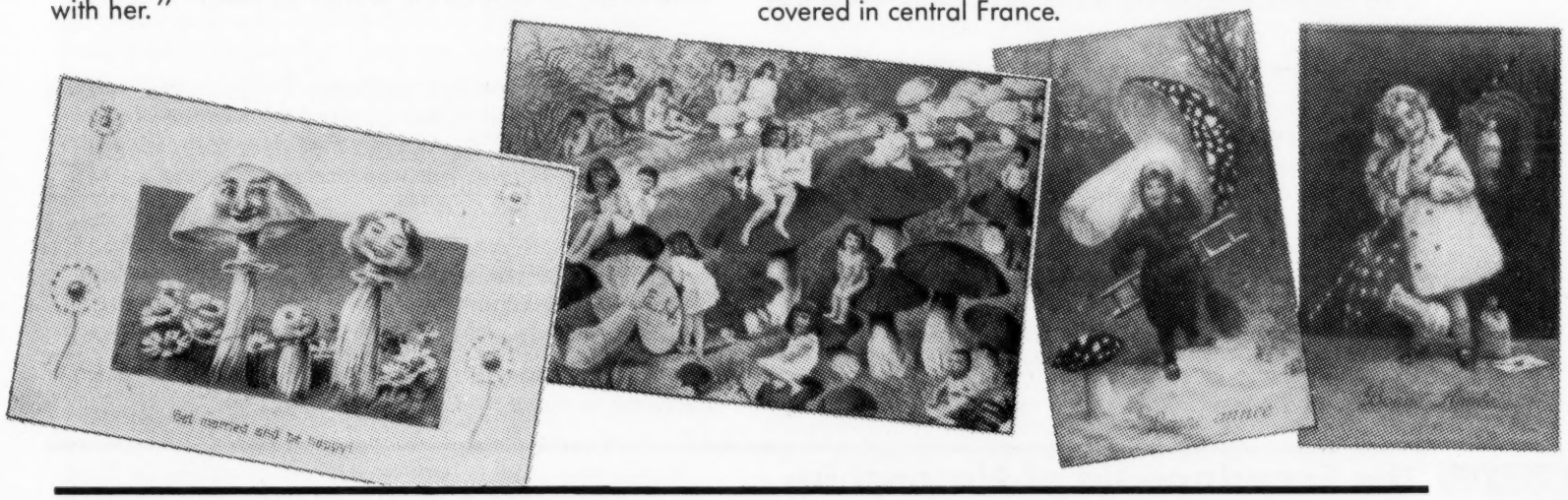
Mushroom
(The Journal of Wild Mushrooming)
Don H. Coombs and Maggie Rogers, Editors
$12/year
(4 issues) from:
Mushroom
Box 3156
University Station
Moscow, ID 83843



•

The Perigord truffles have historically defied taming. The best attempts at "cultivation," until recently, involved planting oak seedlings or acorns in an area known to produce truffles. You planted and you waited, and waited, for seven to ten years.

Recently the French government stepped in. In 1970 a team of researchers at an agricultural laboratory in Clermont-Ferrand announced that they had successfully attached the long strands of mycelium to the roots of an oak tree. Three years ago the first truffle grown in the wild on the roots of such an "inoculated" tree was uncovered in central France.



A Field Guide to Poisonous Plants and Mushrooms of North America

Plants that cause skin rashes. Toxic plants of the home and garden. Wild poisonous plants. Poisonous mushrooms. Hallucinogens that can be abused. From stinging nettles to fly agaric, this is the best book available — even allows that humans might want to experiment and helps you nibble rationally. My only suggestion: it needs a chapter on what to do if you cannot get to a hospital, doctor or pharmacy in three to five hours. Some of us tread wayward places alone. —*Peter Warshall*

Monstera deliciosa **Dieffenbachia picta**

•

Symptoms: Immediately upon chewing plant parts of aroids, an irritating or burning sensation is felt throughout the mouth, tongue, lips, and throat. These symptoms may be followed by copious salivation and swelling of the tongue. Talking, swallowing, and breathing may become difficult. In severe cases, swelling of the tongue can cause choking or death. The difficulty of talking with a swollen tongue accounts for the Dieffenbachia's name of dumb cane. Symptoms may subside in several minutes or persist for more than a week.

•

Just remember, "There are old wild mushroom eaters and bold wild mushroom eaters, but very few, if any, old and bold wild mushroom eaters."

•

Save a few fresh mushrooms from the pot. If you make a mistake, an expert can identify the mushrooms and you will have a much better chance of getting the proper treatment.

A Field Guide to Poisonous Plants and Mushrooms of North America
Charles K. Levy and Richard B. Primack
1984; 184 pp.
$10.95
postpaid from:
The Stephen Greene Press
P.O. Box 1000
Brattleboro, VT 05301

or Whole Earth Access

North American Fruit Explorers (NAFEX)

These folks are backyard orchardists, many with a lifetime of experience to share on every conceivable problem (well, almost) having to do with fruit orchards. Their quarterly, ***Pomona****, exchanges member information that is priceless. They are a stolid outfit that stays together by refusing to argue the finer points of organic vs. nonorganic orcharding. Anyone with some experience is urged to share it and they will let it stand on its own merit. NAFEX also has testing groups for each fruit, which receive evaluations on cultivars (a variety of plant that has been produced only under cultivation) from members and can provide information to members on request.*

A consulting staff in special areas such as budding, grafting, soils, winter hardiness (including a five-person staff on organic research), is available with information on problems a member may be having. And they have a lending library.

Pomona's *policy of sunny noncontroversy is occasionally disrupted by a delightful downpour of disagreement, on say, apricot kernels; and as that exchange showed, there is no scientific snobbery in this outfit. —Peter Beckstand*

•

Raspberry - Chestnut Intercropping

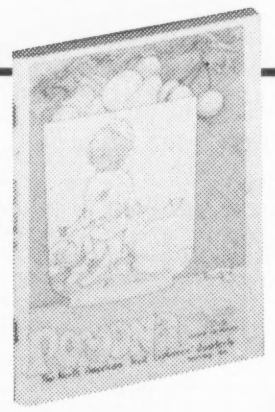
We are trying an intercropping system that might be utilized on other farms. On an 80 feet by 90 feet test plot, we have planted raspberries in rows 15 feet apart (twice that of recommendation). In the rows with the berry canes, we planted young Chinese chestnut trees every 15 feet. The chestnut trees are mulched, weeded, and fertilized along with berries, which are allowed to grow close beside the trees. Beds of vegetables about five feet wide run between the raspberry-chestnut rows.

This system is an attempt to care for a succession of crops with the least effort, while making use of space.

North American Fruit Explorers

Membership

$6/year
(includes 4 issues *Pomona*)
from:
Mary Kurle
10 South 055 Madison St.
Hinsdale, IL 60521



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Last November when I was standing in a checkout line of a local supermarket to pay for the quantity of Hachiya Oriental persimmons, a fellow behind me asked what kind of fruit I had. I told him what they were and explained that they were grown in California and shipped to various stores throughout the country. This fellow then described a native persimmon (which he called ''Possom Apple'') which grew on his homestead that was delicious in taste prior to frost, had a size equal to that of a quarter and sometimes to a half dollar, yellowish-red, and ''People all over the neighborhood in Elkview came by to sample these Possom Apples.'' He went on to say that there were many trees of it in the area, but none were as big or tasty as the one on his place.

•

I have a great pear tree, probably 110 years old — it's a seedling. My grandmother planted it when they homesteaded here in 1870. All the other pear trees died off — blight killed them. This tree was never bothered with blight or any other disease.

Never been sprayed or fertilized — but it has had pears every year I can remember — and I am 73. It's a late pear. If you pick them green in November and bring them inside, they will keep until Christmas.

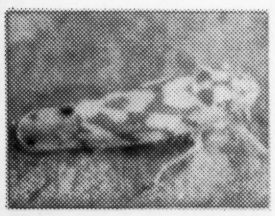
I do not sell budwood, but if anyone wants it, they are welcome to come and get it.

Holly leafminer damage.

The Encyclopedia of Natural Insect and Disease Control

Another epic in the Rodale saga, ***The Encyclopedia of Natural Insect and Disease Control*** *is a revised and expanded version of the 1976 release,* ***Organic Plant Protection****. A high point of this new book is the 31 pages of high-resolution color photos of beneficial and pest insects, and disease and fungus problems. Organic horticulturalists will be pleased with the scope of the main text, which covers a wide range of vegetables, flowers, shrubs, trees, and lawns.*

Die-hard Rodale devotees will rejoice at the pure volume of totally organic control strategies offered. Some entries, however, read like a long-winded politician deliberately evading the issue rather than admitting that no organic control is available for that particular problem. Accordingly, results-oriented integrated pest management gardeners will look to it as a prime source of pest-avoidance strategies, but not too much more. Basically it's a solid main-line reference book for organic fundamentalists. —Will Ross



Grape leafhopper.

•

Trichogramma

Several species of this tiny wasp parasite are marketed for use in controlling some two hundred insect pests. Wasps are sent through the mails as eggs. Three species are available currently: *Trichogramma platerni*, for avocado groves and orchards; *T. pretiosum*, for vegetables and field crops; and *T. minutum*, for ornamentals, orchard crops, and grapes.

The wasp lays its egg in the host egg, which then ceases development. The wasp larva feeds on the egg and emerges as an adult. Thus the pest never gets a chance to damage a crop.

Trichogramma wasp.

•

Sabadilla

The seeds of this South and Central American plant are ground into a powerful insecticidal dust. It is effective against a good number of pests, including grasshopper, European corn borer, codling moth larva, armyworm, webworm, silkworm, aphid, cabbage looper, imported cabbageworm, melonworm, squash bug, blister beetle, greenhouse leaftier, chinch bug, lygus bug, harlequin bug, and many household pests. The insecticidal effect is diminished soon after application. Sabadilla dust and seed can irritate mucous membranes and bring on sneezing fits. Honeybees are vulnerable to sabadilla.

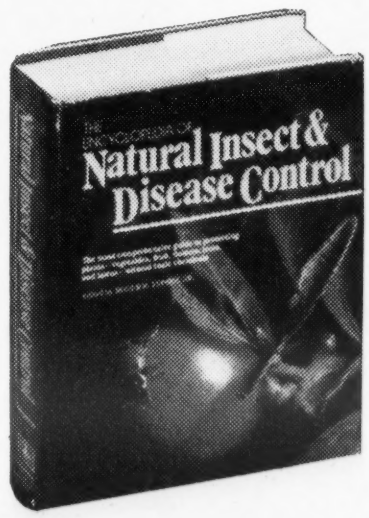
The Encyclopedia of Natural Insect and Disease Control

(The most comprehensive guide to protecting plants — vegetables, fruit, flowers, trees, and lawns — without toxic chemicals)

Roger B. Yepsen, Jr., Editor
1984; 490 pp.

$21.95
postpaid from:

Rodale Press
33 East Minor Street
Emmaus, PA 18049
or Whole Earth Access



Winter trimming of the hanging curtain on T-bars.

Kiwifruit Culture

With the exception of a few Yukon prospectors still living on hardtack, powdered eggs, and dried milk, I guess that everyone has finally met the kiwi — a fuzzy, brown, egg-shaped fruit that tastes like a banana-flavored strawberry. It began life in China, traveled to New Zealand, and has recently arrived in the U.S. Although there are a few commercial operations (mainly on the West Coast), kiwi culture in America is basically the work of a handful of backyard gardeners using trial-and-error methods.

My own introduction to kiwis began with the experimental purchase of one of the little fruits at a roadside stand. I ate it and I dug it. But I only ate one because it cost 79¢. However, the flavor had me primed; when my local nursery offered barerooted vines, I came home with five. Knowing nothing of their nature or needs, I paid no attention to details and they were soon carelessly planted.

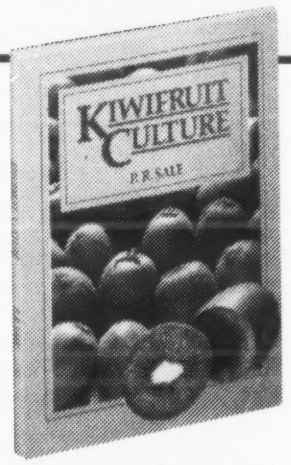
Later I visited a commercial kiwi operation — Good Lord! Spindly vines had become six-inch diameter trunks bearing a huge canopy of growth supported on quarter-inch cables strung from four-by-four posts. And the vines were planted 20 feet apart. I'd planted mine on two feet spacings!

I then realized what was grievously missing — written information on how to grow kiwis. Since there is not a single book published in the U.S. on kiwi culture, you can imagine my joy when a kind reader in New Zealand sent me a copy of this manual. It's a model of what a good garden book should be — brimful of practical information, loaded with color photos and extremely readable.

If you're blessed with a kiwi climate then try planting a few vines, or even start from seed. Keep in mind that you need at least two for pollination and that a mature female can produce upwards of 200 pounds of fruit after seven to nine years.

But if you've been given a New Mexico climate you can safely forget the whole affair. On the other hand, a true garden fanatic might fantasize a bonsai'd kiwi in a New Mexico solar greenhouse. Unlikely, yes? But think of the challenge. —*Dick Fugett*

Kiwifruit Culture
P.R. Sale
1983; 94 pp.
$15.95 (New Zealand $)
postpaid from:
Government Printing Office
Private Bag Wellington I
New Zealand



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Kiwifruit require a site free from spring and autumn frosts, with a well-drained soil. They like a relatively high atmospheric humidity and an adequate supply of moisture throughout the year, but not excess water at the roots. A climate that offers 25-30mm (1-1¼ in.) of rain per week through late spring and summer and an average humidity of around 50-70% will be adequate. Although frost tender while in leaf, kiwifruit benefit from a certain amount of winter chilling (approximately 400-600 hours below 7°C. [45°F.]).

•

Kiwifruit can be propagated in several ways. Grafting the desired variety onto a seedling rootstock is the general commercial practice. Plants can also be grown from cuttings, rootcuttings, or by budding. Older vines can be top-worked to more desirable varieties.

Seedlings are variable and not suitable for commercial fruit production. Moreover, these dioecious seedlings can take 4-7 years to flower, and until they do there is no reliable method of distinguishing between male and female plants.

•

Because kiwifruit crop on current season's growth arising from 1-year-old wood, there must be a well-distributed quantity of 1-year-old wood on the vine at the start of each growing season.

Garden Gourmet

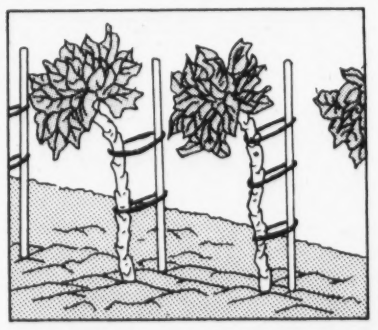
I just graze right out of the garden. A gourmet cook I am not. Collaborations of gourmet cooking and gardening are quite rare. ***Garden Gourmet*** *magazine finally does justice to both gardening and cooking. The mix of the two makes for great eating and a wonderful magazine. The overall quality of information is top-notch combined with a pleasant format. Now — to try Cajun Popcorn with Sherry Wine Sauce.* —*Shane Smith*

•

Crowder peas are so named for the asymmetrical shapes they assume as a result of being "crowded" into the pods. 'Brown Crowder' takes up to 85 days to reach maturity. It is a light tan or buff color in its raw state and turns brown when cooked. Some other varieties recommended for northern gardens are: 'Colossus,' 'Crowder Knuckler Purple Hulled' and 'White Crowder.'

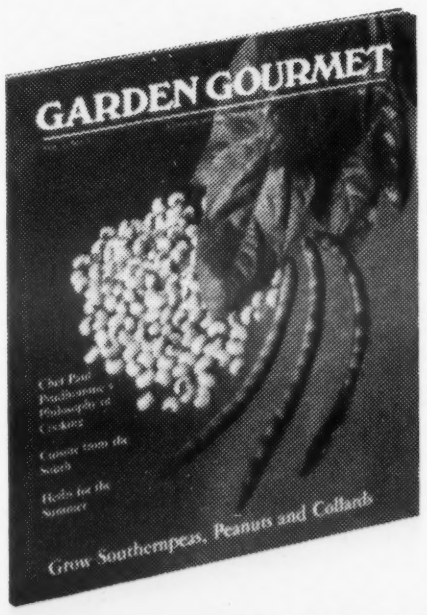
Cooking Collards Anytime

For tender, best flavored fresh greens, leaves should be picked while they are still five to six inches long. The greens should be rapidly cooked initially, followed by a slow simmering. The traditional method of cooking is to toss fresh cleaned leaves in hot melted fat, oil or butter. Then pour boiling water over the greens, bring to a vigorous boil and turn them down to simmer quietly until they are tender.



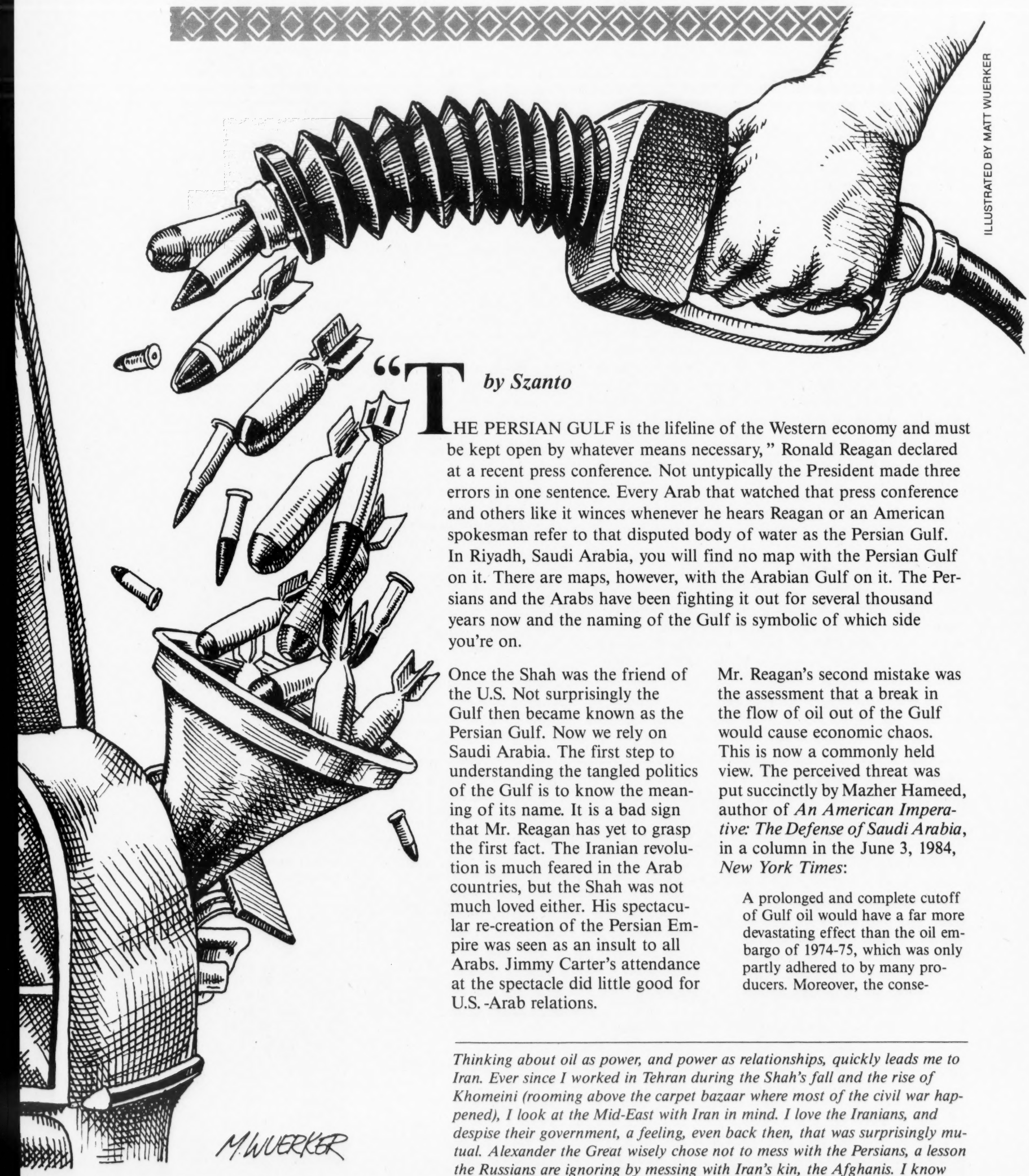
Proper way to stake full-grown collards.

Garden Gourmet
Mary Ann Hickey, Editor
$12/yr. (12 issues)
from:
Opportunity Press, Inc.
Suite 1405
Six North Michigan Avenue
Chicago, IL 60602



REAL INTELLIGENCE

NOT A JOB FOR THE CAVALRY



ILLUSTRATED BY MATT WUERKER

by Szanto

"THE PERSIAN GULF is the lifeline of the Western economy and must be kept open by whatever means necessary," Ronald Reagan declared at a recent press conference. Not untypically the President made three errors in one sentence. Every Arab that watched that press conference and others like it winces whenever he hears Reagan or an American spokesman refer to that disputed body of water as the Persian Gulf. In Riyadh, Saudi Arabia, you will find no map with the Persian Gulf on it. There are maps, however, with the Arabian Gulf on it. The Persians and the Arabs have been fighting it out for several thousand years now and the naming of the Gulf is symbolic of which side you're on.

Once the Shah was the friend of the U.S. Not surprisingly the Gulf then became known as the Persian Gulf. Now we rely on Saudi Arabia. The first step to understanding the tangled politics of the Gulf is to know the meaning of its name. It is a bad sign that Mr. Reagan has yet to grasp the first fact. The Iranian revolution is much feared in the Arab countries, but the Shah was not much loved either. His spectacular re-creation of the Persian Empire was seen as an insult to all Arabs. Jimmy Carter's attendance at the spectacle did little good for U.S.-Arab relations.

Mr. Reagan's second mistake was the assessment that a break in the flow of oil out of the Gulf would cause economic chaos. This is now a commonly held view. The perceived threat was put succinctly by Mazher Hameed, author of *An American Imperative: The Defense of Saudi Arabia*, in a column in the June 3, 1984, *New York Times*:

> A prolonged and complete cutoff of Gulf oil would have a far more devastating effect than the oil embargo of 1974-75, which was only partly adhered to by many producers. Moreover, the conse-

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Thinking about oil as power, and power as relationships, quickly leads me to Iran. Ever since I worked in Tehran during the Shah's fall and the rise of Khomeini (rooming above the carpet bazaar where most of the civil war happened), I look at the Mid-East with Iran in mind. I love the Iranians, and despise their government, a feeling, even back then, that was surprisingly mutual. Alexander the Great wisely chose not to mess with the Persians, a lesson the Russians are ignoring by messing with Iran's kin, the Afghanis. I know Iran well enough to know that what Szanto, our real-intelligence contact, says is true: Iran is not a people to war against if you want to win. — Kevin Kelly

The Western world will not be on its knees due to a short disruption of Mid-East oil.

quences would be devastating in the United States as well as in Europe. Consumers throughout the world would be compelled to draw their oil from other suppliers, leading, eventually, to skyrocketing oil prices, inadequate supplies, spiraling inflation, industrial cutbacks, renewed and deep recession and mushrooming unemployment.

This false perception then leads to the third error: that these terrible consequences can be avoided by calling in the cavalry. These three errors point to the three levels on which the crisis of the Gulf must be understood: the politics of the region, the world oil situation, and the realities of military intervention.

First let's look at the politics of the region, in which the cardinal rule is: "My enemy's enemy is my friend," which leads one to draw a circular chain of mutual antipathy. One of the best examples of hopeless complexity confronting western involvement in the region is the U.S. proposal to create a Jordanian strike-force funded by the U.S. to intervene if needed. Such a force would be completely unwelcome wherever it might be needed. Mr. Reagan and his advisors are obviously unaware of the origins of the current ruling Hashemite dynasty in Jordan. The diplomatic and moderate King Hussein of Jordan is the grandson of Abd Allah Husayn who with his brother and father lost the battle with the Saud family for the control of the Arabian peninsula. The Hashemites were forced to withdraw to what became Jordan and Iraq. In Jordan the Husayn family established a monarchy and dominance over the Palestinians. That struggle made them extremely unpopular with not only the Palestinians but all the royal families of the Arabian Gulf. Not one of them would dream of inviting the Hashemite armies back.

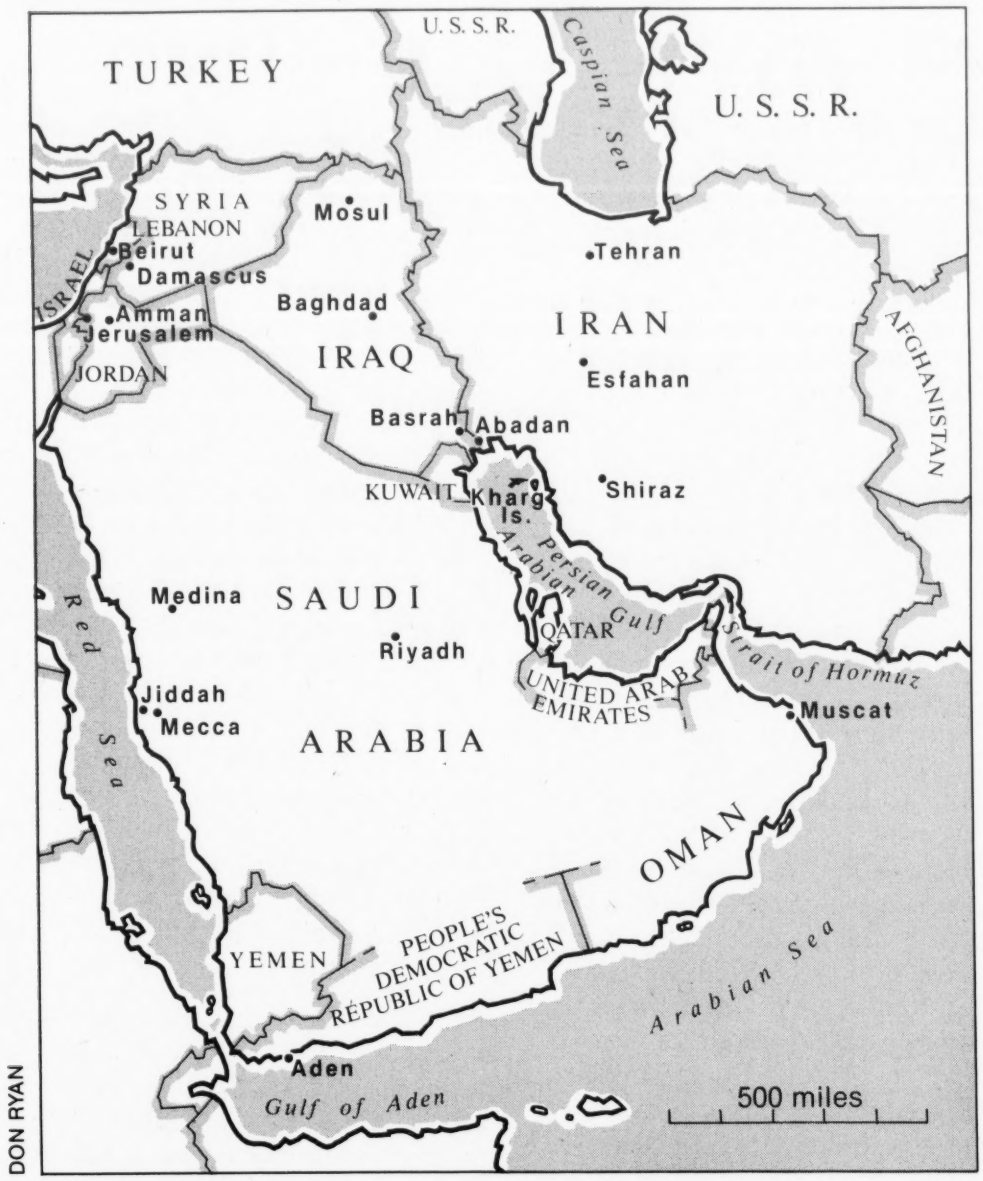
The region is shaped by a multilayered array of antipathies. There is the most ancient conflict between the Persians and the Arabs. That struggle has set Iran, which has been Persian-dominated, apart from the rest of the region for centuries. The second level is Islamic factionalism, which has theological and historical dimensions creating divisions along sectarian lines such as the Shia vs. the Sunni and the fundamentalists vs. the modernists. The third dimension is the struggle among the families for dominance. Each of the states along the southern Gulf is a feudal kingdom. With one exception each state is the result of dominance of one family over a piece of turf. The exception is the United Arab Emirates, which is the result of a truce among seven different families. Three years ago this group of feudal monarchies created what is called the Gulf Co-operation Council, or GCC. It is intended to be a combined economic community like the common market in Europe with overtones of NATO. But the ruling familes have had little luck in actually cooperating on anything, whether economic policy or defense policy.

The one thing all the members of the GCC can agree on is the common enemy. At a seminar sponsored by the GCC at Oxford University, Abdullah Bisharah declared that the GCC needed an independent deterrent force. When asked, "To deter who?" his reply was "Israel, of course." The Arab-Israeli conflict is yet another dimension of regional politics. Fred Halliday, the British political analyst, asked him if he wasn't a bit worried about Iran, conflict among themselves, and internal dissent in their kingdoms. Bisharah answered the challenge by responding, "There may be spats among brothers, but they are small compared to the great struggle against the Zionists and their supporters."

As a result of extremely pro-Israeli U.S. policy and the complete failure in Lebanon, the U.S. has little support and no credibility in the Gulf region. While to us the potential threat of the Ayatollah must be greater, to the GCC members the Israelis are the greatest enemies. Their allies can hardly be true friends of the Arabs — it can only be an alliance of convenience. Secondly, as a result of the aimless, thoughtless, and disastrous intervention Lebanon, the U.S. is seen as ineffective and dangerous. On both sides of the Gulf, Persian and Arab, one hears, "the Americans have no guts."

On whose side do you intervene and to what end? One Arab prince at the Oxford seminar put it well: "We are trapped among the devils — the American devil, the Israeli devil, the Russian devil, the Ayatollah, and the aspirations of our own people." It is not enough to form a policy for the region based on the need for oil and the apparent simplicities of the East-West conflict. Policy must be based on an understanding of the long-standing political complexities of the region. But it is oil that makes the politics so problematic. So let us now examine the facts behind the claim made by Mazher Hameed — that the West would come to a standstill without the Gulf's oil.

In 1973, when the first oil crisis hit, the world's demand for oil was growing rapidly. U.S. production had peaked in 1970 and imports of oil grew rapidly thereafter. Europe and Japan were already major importers of oil. Most of the growth in imports came out of the Gulf. The dramatic rise in prices in the seventies had two major impacts. First it reduced the basic trajectory of oil demand — as it got more expensive people learned how to



DON RYAN

It turns out that the Straits of Hormuz are so wide and deep that closing them by force will be nearly impossible.

live with less of it. Second, as it got more expensive it encouraged others to produce more oil and such competing fuels as gas and coal. As a result there has been a dramatic decline in the fortunes of OPEC. In 1980 they were producing 34 million barrels a day at $34 a barrel. By this year their production has been cut in half to less than 17 million barrels a day at $29 a barrel. As the earlier rise in production came out of the Gulf, so the cuts came mainly in the Gulf. First came the Iranian revolution which took out six million barrels per day of production. Iraq's failure in the war led to an Iranian blockade which took out another two million barrels per day. The Saudis who had been producing eleven million barrels per day at the peak gradually reduced to around five million barrels per day.

To assess the significance of a complete loss of oil from the Gulf we need a clear picture of the current situation. During the first quarter of 1984 the countries of the Gulf produced 10.9 million barrels a day (mbd) of which 9.1 mbd was for export out of the Gulf. Exports of 1.8 mbd run through pipelines across Saudi Arabia and through Turkey, leaving 7.3 mbd to flow through the Straits of Hormuz by tanker. The potential loss of 7.3 mbd represents about 15 percent of the consumption of non-Communist countries. Oil companies, producing countries, and some consumer countries have a great deal of oil in reserve. The companies normally keep about 70 to 80 days' worth of consumption in oil reserves. The United States government has the greatest reserve stocks — nearly 400 million barrels stored in salt domes in Louisiana. These reserves could cover the world's needs for four to six months. In addition a number of countries outside the Gulf could produce more than they are now. Such countries as Mexico, Venezuela, Nigeria, Indonesia, and Libya have the technical capacity to produce three to five mbd more than they are now. In addition, a complete loss of Gulf oil would immediately encourage a return to the conservation measures of a few years ago — less air conditioning and so on. If you add conservation to the additional oil production potential the reserves could be stretched to nearly a year.

From a purely technical point of view, therefore, there should be no reason for panic. However, the reality is a bit more complex than we have seen so far. The first question every oil company and every government will ask after a shutdown of the Gulf is, "How long will it last?" A loss of a few days or weeks is one thing, but months of shutdown would be another. The second question will be, "Will the reserves get to me?" These back-up systems have never been tested in real life so no one can be entirely sure that they will work as intended. If fear wins out and a buying panic breaks out the price of oil could shoot up. How high is anybody's guess. It could be as little as ten dollars over today's price of $29 a barrel or the price could more than double. If the spare oil begins to flow quickly or the disruption ends the price would fall back to roughly current levels or maybe even lower. In the last oil shock it got as high as $44 — the Japanese bidding for Kuwaiti oil — before falling back to $34. Thus, short of an all-out war closing the Gulf for many months, the worst consequences are likely to be a brief period — a few weeks, perhaps — of higher oil prices. The world's economy will be hurt by such a price spike, but if that is all that happens the impact will not be as great as in the last two oil shocks. Then the price explosion remained in force. The Western world will not be on its knees due to a short disruption.

If, however, the government and private buyers of oil come to believe that the disruption of supplies will last a long time — many months or more — then the price will rise and not come back down. A real shortage will develop as people try to stock up, leading to the kind of buying panic described earlier. This means that the new price will be somewhere below the peak reached during the panic, but well above today's level. The economic impact of that will be quite great — a new major recession, at least. If no way is found to change the conditions, then the impact on those countries already in deep trouble because of debt problems, such as Brazil and Argentina, could push them off the precarious tightrope on which they are barely balanced. That chain is now a familiar one, so it needs no elaboration.

What would lead buyers of oil to believe that an oil disruption will be prolonged? A couple of years ago, when oil company executives would ask the oil minister of Saudi Arabia, Sheik Yamani, "What happens if the Straits are shut?" Yamani would reassure them by suggesting that he understood that the U.S. would quickly intervene to reopen the "lifeline of the West." After all, what was the purpose of the new Rapid Deployment Force if not intervention in just such situations?

After the escalation of attacks on tankers began in May of this year, the simple comforting myth of the cavalry ready to ride to the rescue gave way to a much more complex and potentially deadly reality. First, it turns out that the Straits of Hormuz are so wide and deep that closing them by force will be nearly impossible. Second, the attacks on tankers have been provoked by the Iraquis, who are allied with the U.S., U.S.S.R., and Saudi Arabia. This considerably weakens the legitimacy of their position. Third, the Iranians have less drastic options, like raids on Kuwait, attacks on tankers to frighten crews, owners, and insurers, and the terrorist attacks on oil installations in Saudi Arabia. Fourth, there is no such thing as the Rapid Deployment Force, just an office in the Pentagon that can quickly call on forces specially earmarked in other commands. Rapid, therefore, means something like a month or more. Finally, the Arabs are not wildly enthusiastic about the American cavalry coming to the rescue after all.

Thus the first line of reassurance to the oil market is the Saudis, and as I write this, so far so good. The calm in the market is also a function of the relative weakness of oil demand during the warmer months of the year, but that situation will change with the coming of winter. But more important is the perception that behind the Saudis lies the further protection of the cavalry.

At every point in this tragic drama the Iranians have been underestimated.

Now this is where it gets sticky. If the situation deteriorates to the point where the U.S. feels compelled to intervene, then it would soon be apparent that the disruption would be long-lasting indeed.

Many people believe that the U.S. would quickly force the Iranians into retreat and the oil would quickly begin to flow again. This comforting hope overestimates U.S. capabilities and Iranian weakness. It is one thing to invade Grenada; it is another to take on a country of 35 million people, many of whom are driven by a profound commitment to their faith. At every point in this tragic drama the Iranians have been underestimated — the Shah couldn't fall, the Iraquis will win quickly, the Iranians can't hold on for years, and they certainly can't successfully disrupt shipping. In Iran nearly every household has suffered casualties and their endurance in the struggle gives meaning to their suffering. If American forces enter the fray they will not come home for a long time. The Iranians will not back down, and conquest and occupation are not plausible outcomes. Not only does the U.S. face Iran in a protracted struggle, but if military necessity leads U.S. troops onto Iranian soil it may also bring in the U.S.S.R. Try to imagine the American reaction if the Russians invaded Mexico, for whatever reason. Thus the Gulf confrontation, once the U.S. enters, could become the trigger for a much larger war. The danger, therefore, is not merely one of an extended disruption of oil supplies, but that World War III could result from an American intervention.

So what are the options? First, there is no need for panic if there is a short-term disruption in the Gulf. Second, the world faces two extreme choices with respect to the Gulf. An extended disruption of the oil supplies from the Gulf would be highly destructive and in the long run the world will become more dependent on the still abundant oil of the Gulf as the rest runs down. One alternative is to sell all the Gulf players enough arms so that they can maintain their own armed balance. This clearly is their preference. They are already heavily armed as a result of oil wealth combined with historic enmities. The militarization of the Gulf may be an inevitable outcome of this war among the very wealthy. One wonders, however, just how friendly a Saudi military government will really be, and just how stable an armed region will be. Recent history is certainly not encouraging. Far more preferable, but almost impossible to imagine, would be the disarmament of the region and guarantees of security by all concerned powers, east and west. Such a rational solution seems highly unlikely. Thus we can expect continuing turbulence, violence, and fragility as the long-term legacy of oil dependence by the consumers combined with the oil wealth of the producers in a region which has no tradition of peace and harmony. But far graver consequences may follow should a failure to understand the painful reality of the Gulf bring the cavalry riding over the dunes. ■

US/USSR Bi-National Research Park in the Bering Strait

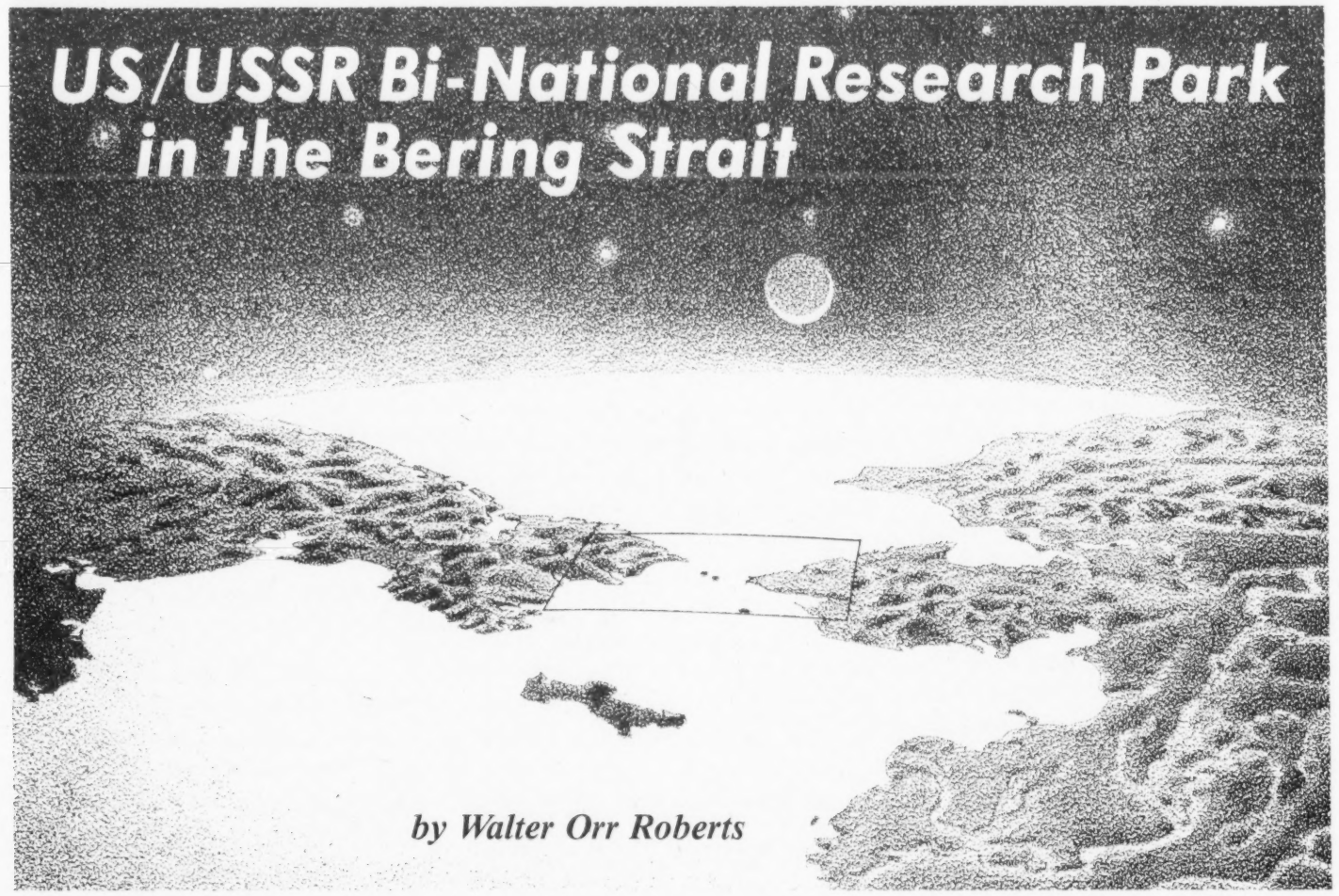


ILLUSTRATION BY DON RYAN

by Walter Orr Roberts

THE MAINLAND of the Soviet Union lies only 60 miles from the mainland of the United States in the Bering Strait, which separates Alaska and Eastern Siberia. The two sides of the Strait are like mirror images of each other. On both shores are lagoons, bays, rivers, and other common environmental features of great ecological importance. In the Strait itself are meteorological and oceanic phenomena of high scientific interest, and the Strait is a channel of extraordinary importance for the migration of fish and ocean-going mammals. The regions have common arctic birdlife, botany, and land animals living in equilibrium with common and fragile arctic permafrost ecosystems.

Would it not make sense, in the present stress between our two countries, to create an American-Soviet Bi-National Research Park that will promote cooperative scientific studies of the unique natural environment common to both halves of the area? The region could become a common laboratory for cooperative environmental investigations of great fundamental importance. I would like to see the two governments agree to permit establishing laboratory facilities on both continents, within short single-engine airplane travel distance from each other, with lab space, dormitories, cafeterias, conference space, and small plane airstrips. They should also make special arrangements for frequent and facile summer travel by scientists from both sides to work on common research problems in a cooperative mode, free from the red tape of usual bi-national scientific exchanges.

The idea of creating a bi-national environmental research "park" in the Bering Strait area occurred to me more than 15 years ago, when it did not "catch on." Under the concept, the two nations would designate as a research park a region about 175 miles by 110 miles centered exactly on the Bering Strait. The research preserve thus would extend about 50 miles inland on both continents. A look at a large scale map reveals that the two land masses possess remarkable symmetry of landscape, and have similar ecosystems. Bird nesting and migration, fish migration in the Strait, ocean currents through the narrow passage between the continents, and a host of other natural ecosystem topics beckon to researchers.

Within the zone special and joint research could be conducted on biological, environmental, anthropological, cultural, atmospheric, oceanographic, and other fascinating aspects of this unique region, the point of closest geographical contact of the two nations.

The concept may be too idealistic. But it seems to me it would have great symbolic power. It could be a tangible sign of cooperation between the world's two most powerful nations, whose relations today are at a deep impasse. I can foresee no national security hazards from either nation's standpoint. Is it worth a try? ■

Walter Orr Roberts is president emeritus of the University Corporation for Atmospheric Research, and an eminent climatologist and solar astronomer. —*Kevin Kelly*

The Parable of the Tribes

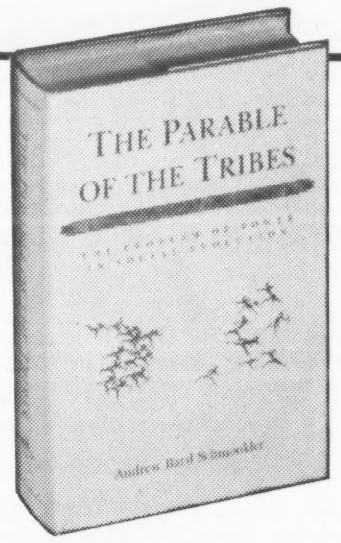
I wondered what would come of it if I agreed to help the earnest young man with the huge dissertation manuscript. He had walked into my office, plopped the thing down, and engaged me in a remarkably profound conversation about the sources of war-making in human society. I agreed to take the manuscript home and have a closer look: by early that evening I knew I had no choice but to try to help him get it rewritten and published.

Over the four years since meeting Andy Schmookler, many others have had a similar experience. Quotes from Jonas Salk, Daniel Yankelovich, Seweryn Bialer and others on the back jacket of this beautifully published work indicate that there have been numerous friends helping get it out of the closet.

Within minutes of opening the manuscript my eyes fell on a passage which I find just as arresting today as I did then. It sets forth the central query of the book:

> *Imagine a group of tribes living within reach of each other. If all choose the way of peace, then all may live in peace. But what if all but one choose peace, and that one is ambitious for expansion and conquest? What can happen to the others when confronted by an ambitious and potent neighbor? Perhaps one tribe is attacked and defeated, its people destroyed and its lands seized for the use of the victors. Another is defeated, but this one is not exterminated; rather it is subjugated and transformed to serve the conqueror. A third seeking to avoid such disaster flees from the area into some inaccesible (and undesirable) place, while its former homeland becomes part of the growing empire of the power-seeking tribe. Let us suppose that others observing these developments decide to defend themselves, in order to preserve themselves and their autonomy. But the irony is that* successful defense against a power-maximizing aggressor requires a society to become more like the society which threatens it. *Power can be stopped only by power, and if the threatening society has discovered ways to magnify its power through innovations in organization or technology (or whatever), the defensive society will have to transform itself into something more like its foe in order to resist the external force.*

The Parable of the Tribes
(The Problem of Power in Social Evolution)
Andrew Bard Schmookler
1984; 405 pp.
$21.45
postpaid from:
The University of California Press
2120 Berkeley Way
Berkeley, CA 94720
or Whole Earth Access



From an academic point of view this book is about "the problem of power in social evolution," which phrase is used as a subtitle. More simply, it is an analysis of why societies fight. His simple, powerful analysis of this fundamental fact of human life could not be more timely. His diagnosis of our dilemma is comprehensive, original, and blame-free. As such it offers a context in which we might begin to identify the systemic changes required if we are to be able to "choose life."

In short, I find this to be one of the most important books on war and peace ever written. —*Robert W. Fuller*

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The parable of the tribes explains that as people stepped across the threshold of civilization, they stumbled into a chaos that had never existed before. When human beings became the first creatures to invent their own way of life, their societies appeared to become free to develop as people might wish. But what may be freedom for any single society adds up to anarchy in the interacting system of societies. In this anarchy — unprecedented in the evolution of living systems — civilized societies were condemned to engage in a struggle for power. Among the cultural possibilities human creativity developed, only the ways of power could survive and spread. And the earth became a place where *no one is free to choose peace, but anyone can impose upon all the necessity for power.*

The Evolution of Cooperation

The "Prisoner's Dilemma" is a situation where two individuals can choose to cooperate with each other or not cooperate (defect). If they both cooperate they each get three points. If they both defect they each get one point. If one cooperates and one defects, the cooperator gets zero and the defector gets five. Axelrod uses this non-zero-sum game to explain the arms race, international relations and the interaction of regulatory agencies with those they regulate.

First the good news: in a population of individuals interested in their own welfare, where no central authority exists, it pays to cooperate. Cooperative rules "won" over noncooperative ones in simulated iterations.

Now the bad: In the same situations it also pays to be provokable (to defect in retaliation). Rules that were totally cooperative without retaliation did not win.

There is little value for complexity here. The best strategy is simple enough to be readily recognized by another player. No strategy is a winning strategy by itself. It can only be judged by its interaction with other strategies.
—*Judith Brophy*

The universe in a grain of sand. The grain is a mathematical/sociological paradox, much studied, called "Prisoner's Dilemma." The universe is the one we might survive into if these lessons are believed and applied. Scholarly tour-de-force. —*Stewart Brand*

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Four simple suggestions for how to do well in a durable iterated Prisoner's Dilemma:
1. Don't be envious.
2. Don't be the first to defect.
3. Reciprocate both cooperation and defection.
4. Don't be too clever.

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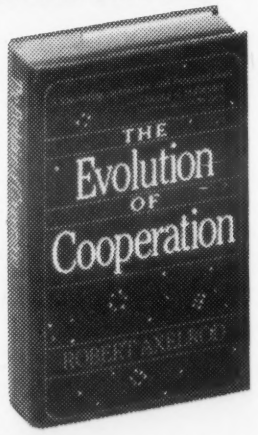
The foundation of cooperation is not really trust, but the durability of the relationship . . . Whether the players trust each other or not is less important in the long run than whether the conditions are ripe for them to build a stable pattern of cooperation with each other.

The Evolution of Cooperation
Robert Axelrod
1984; 247 pp.
$17.95
postpaid from:
Basic Books, Inc.
10 East 53rd Street
New York, NY 10022
or Whole Earth Access



To the untrained eye this is a picture of an army lorry. To a military expert it is a Soviet Army ARS-14 chemical decontamination vehicle with special filtration apparatus above the cab, and sealed window/vents. But this picture was taken in Afghanistan, and so an intelligence expert sees it as evidence of Soviet use of chemical agents there and would at once start looking for collateral confirmation.

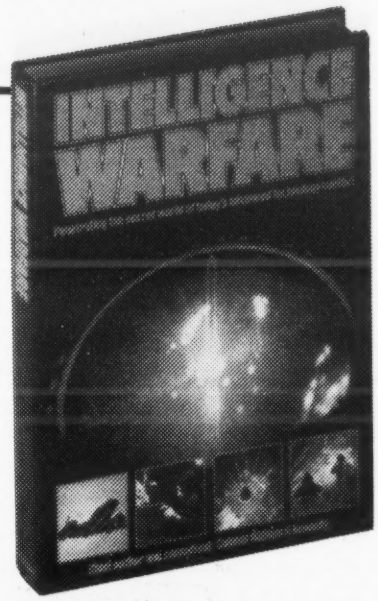
Intelligence Warfare

Intelligence Warfare *sheds some light on the present state of the art in intelligence circles while at the same time casting shadows of its own. Written by a team of U.S. and British military intelligence veterans, the book sets out to differentiate between true intelligence work (i.e., gathering data for analysis for defense purposes) and the nasty covert operations that have given the spy agencies a bad rep. Chief author Col. William V. Kennedy considers the CIA a "bureaucratic disaster" and finds its massive emphasis on secrecy to be a serious warping factor affecting both its own operations and those of other cooperating agencies. Once rabid secrecy, sabotage, production of disinformation and other covert actions have been criticized and rather ingenuously read out of the picture, what remains is a fascinating look at the satellites, AWACS, combat reconnaissance, and other high-tech surveillance systems which constitute the underside of the microchip revolution. The authors have few doubts about the virtues of this brand of spy-craft, and therein lies the rub. Full-color photos and diagrams on every page make the plethora of technical information easy to digest — so easy, in fact, that what would otherwise appear nightmarish is transformed here into bright and cheery monuments to human ingenuity. The ultimate result is a popular-level public relations job supporting Pentagon budget increases.*

Intelligence Warfare *provides many facts and insights that you are not likely to easily find elsewhere. Just keep in mind that the book is true to its title and is a participant in the power struggles it presumes to report on.*

—Jay Kinney

Intelligence Warfare
(Penetrating the Secret World of Today's Advanced Technology Conflict)
Col. William V. Kennedy, chief author
1983; 208 pp.
$14.68
postpaid from:
Outlet Book Company
34 Engelhard Avenue
Avenel, NJ 07001
or Whole Earth Access

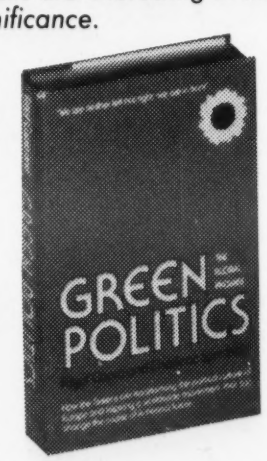


Green Politics

Green Politics *is a provocative introduction to a politics that is radically different from anything we have seen on this continent to date. The content largely deals with the (significant) history of the German Green party, and includes a quick synthesis of the possible ingredients of a green politics in the U.S. Indeed, the book proposes to launch a green political movement in this country. That's great. Certainly we need some relevant content and original form in our politics at every level, and the connections among the various citizens' movements should be articulated, ideally in public debate. The German Greens have accomplished that to a considerable extent, albeit within a much different political context.*

The pillars of Germany's Green politics are: ecology, social responsibility, grassroots democracy, and nonviolence. ***Green Politics*** *describes the emergence of a holistic political theory and practice resting on these pillars. This stands in sharp contrast to the single issueness of our mainstream do-good politics, and conveys the sense of the dynamic coalescence of a movement drawing on many theoretically and politically sophisticated strains of thought. The details are interesting in the extreme, and of genuine significance.*

Green Politics
Fritjof Capra and Charlene Spretnak
1984; 254 pp.
$13.15
postpaid from:
E.P. Dutton, Inc.
Order Department
Two Park Avenue
New York, NY 10016
or Whole Earth Access



Green Politics *is not entirely authoritative. The data is good, the interpretation not so good. The problem is on the level of context: the authors were stuck with trying to make sense of what they got told — a dicey position. (In cases where the work needs to get out in a hurry for the sake of a good cause, you go with what you've got.)*

Florentin Krause, a founder of Freunde der Erde, says the book minimized the socialist and left content of the Greens' politics, and some of the portraits of Green leaders — Petra Kelly and Rudolf Bahro — were misdrawn. Still, he concluded, "It's about time a book like this showed up."

The flaw in ***Green Politics*** *is service to two masters. In aiming to kick off a movement — which is a highly worthy purpose — by chronicling the emergence of such a movement in quite another country, the book suffers a little at the level of texture and depth. That is no fatal flaw.* ***Green Politics*** *is a real contribution to the literature of paradigm shift, which evidently is getting more real. Spretnak (who did the lion's share of the work) and Capra detail a large chunk of the evidence and incentive to shift for ourselves.* *—Stephanie Mills*

•

As we traveled around West Germany talking with Green party officials and legislators in villages, university towns, suburbs, and cities, we noticed a refreshing contrast to political parties in the United States: the Green party is not run by lawyers! Just imagine. The broad range of occupations represented by the Green parliamentarians in the Bundestag (see Preface) is typical of all their elected officials. For example, the Greens in the state legislature of Hesse consisted in 1983 of four teachers, four sociologists, two social workers, a minister, a nurse who was formerly a nun, a former priest, a psychologist, a translator, a writer, a salesman — and one lawyer.

War on Waste

This book is about the big taboo — debt. The taboos of race, sex, and religion have long fallen away, and what remains in this country is a squeamish inability to look at our own fiscal irresponsibility. It is a problem that may have an infinitely more devastating effect upon lives in this country before it has run its course, than any other issue. The book is the outcome of the Grace Commission, chaired by J. Peter Grace and appointed by Ronald Reagan. It is the "private sector" — read business — studying the "public sector" — read bureaucrats. And what is revealed is a federal government that lacks most of the thousands of management innovations that have been created in the past twenty years by enterprise. The report comes to a startling conclusion: the budget could be balanced without cutting a dime of spending or raising taxes. But as it stands, the federal budget deficit will exceed $13 trillion per year. What does that mean? Simple. Runaway inflation or fiscal collapse. No alternative. And both of those have a devastating impact on the middle and lower classes. I see the large federal deficit as a socioeconomic end run by the upper classes. They are not planning it. It is not intentional. It will just happen, because it is those with captial and cash that can best ride out the vagaries of sudden economic downdrafts. We are courting disaster. If the threat of nuclear war is the specter of our collective fear, then the impending economic catastrophe that looms ahead is the specter of our collective greed. This is a minute dissection of how we got there, and how to get out. Its highest recommendation? Bureaucrats and special interest groups universally disavow it. —*Paul Hawken*

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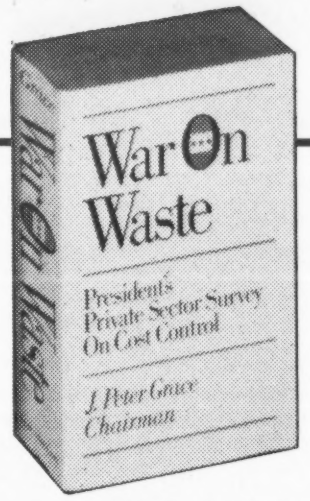
Resistance to additional income taxes would be even more widespread if people were aware that:

War on Waste
(President's Private Sector Survey on Cost Control)
J. Peter Grace, Chairman
1984; 598 pp.
$10.45
postpaid from:
Macmillan Publishing Company
Order Department
Front and Brown Streets
Riverside, NJ 08075



or Whole Earth Access

- One-third of all their taxes is consumed by waste and inefficiency in the Federal Government as we identified in our survey.
- Another one-third of all their taxes escapes collection from others as the underground economy blossoms in direct proportion to tax increases and places even more pressure on law abiding taxpayers, promoting still more underground economy — a vicious cycle that must be broken.
- With two-thirds of everyone's personal income taxes wasted or not collected, 100 percent of what is collected is absorbed solely by interest on the Federal debt and by Federal Government contributions to transfer payments. In other words, all individual income tax revenues are gone before one nickel is spent on the services which taxpayers expect from their Government.
- Government efforts are often aimed at getting the job done without due concern for efficiency. Considerable time and effort are committed to deciding what is to be done, but all too often a comprehensive post audit is not conducted and no follow-up action is taken. In the private sector, post-audit follow-up is considered a critical element in assessing the success of a project.

Fear at Work

This is a good book, concisely written, thoroughly documented and, to my knowledge, the first and only book to deal with the subject of corporate blackmail as wielded against working people, industrial communities, and the American environmental movement.

The technique is old, simple, firmly established: whenever some branch of our industrial empire is faced with labor demands for safe and healthy working conditions, or with proposed regulations that would restrict an industry's traditional freedom to pollute the air, the water, the land, then the managers of that particular industry invariably begin making threats — sometimes subtle, sometimes plain and crude — against the livelihoods of their employees and against the welfare of the local community.

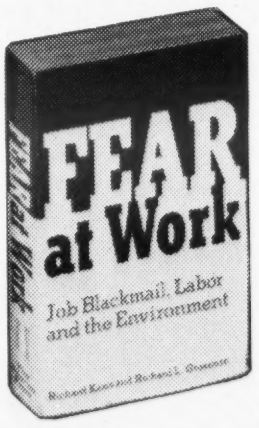
In most cases corporate blackmail is not a bluff. Industrial interests not only play the states against one another, forcing them to compete in the effort to attract industry and thus maintain employment, but play the international game as well. The flight of American capital to overseas investments, where labor is cheap and environmental regulations weak or nil, has been going on for many years and is one of the primary causes of the prolonged economic slump in this country.

Such blackmail is effective because "employers control the jobs. Political leaders, workers, and the public do not. For this reason both the public and its elected officials are vulnerable." Whether corporations actually do move or not, their threat to do so is always credible.

Kazis and Grossman demonstrate that this process of corporate domination of our economy, politics and society has been going on for a long time — for at least a century — as industrialists used their power over jobs to discipline the workforce, oppose environmental regulations, promote the mythology of never-ending material growth, and to buy into, and thus effectively control, our political institutions. As Will Rogers once said, "We Americans have the best politicians that money can buy."

But although the corporate power is awesome, it is not, our authors assure us, all-powerful. Learning from our history we see that workers, by organizing themselves, have managed to win much of the struggle for workplace rights — shorter hours, higher wages, healthier working conditions. The environmental movement too, during recent decades, has succeeded in placing some limits on the power of an undemocratic, centrally-managed industrialism. Kazis and Grossman show that the interests of these two movements are complementary rather than in conflict; that an awareness of mutual concerns is growing; and that if labor unions and environmental organizations begin to support one another and work together, then there is a good chance that our social economy can be placed under majority control, with industry forced to serve the welfare of American citizens as a whole rather than the interests of the corporate-governmental bureaucracy. What they propose, in short, is an extension of the democratic process to include the employer-employee relationship. —*Edward Abbey*

Fear at Work
(Job Blackmail, Labor and the Environment)
Richard Kazis
and Richard L. Grossman
1982; 313 pp.
$12.45
postpaid from:
The Pilgrim Press
132 West 31st Street
New York, NY 10001
or Whole Earth Access



*In "Nicaragua's Other War: Indian Warriors vs. Sandinistas" (**CQ**, Summer 1984, p. 41) Bernard Nietschmann presented "the rationale and goals of the Indians who are actively resisting the Frente Sandinista de Liberacion National [FSLN]" in Nicaragua. Since those Indians have been working in coordination with the CIA-funded FDN and ARDE "contras," it has been extremely difficult to separate the goals of the Indians (control of their own territory) from the goals of the "contras" (overthrow of the revolutionary government in Nicaragua). The time-honored principle of war, "my enemy's enemy is my ally," can be seen at work here, and it is small comfort to those who oppose U.S. intervention in Central America that the Miskito warrior who uses an American M-16 rifle to shoot an FSLN supporter may be doing so for reasons more righteous than a Somocista "contra." At issue here are not only the Indians' rights and goals, but questions of U.S. involvement and goals, disputed tales of torture and massacre on the part of both left and right, and the overriding problem of how to bring peace to eastern Nicaragua.*

*In any event, the Nietschmann article has provoked some spirited response, a portion of which we are presenting here. Roxanne Dunbar Ortiz, editor and publisher of **Indigenous World** ($20/year [2 issues], 275 Grand View Ave. #103, San Francisco, CA 94114) and author of **Indians of the Americas: Human Rights and Self-Determination** (Praeger, NY 1984), has taken strong issue with Prof. Nietschmann's version of the facts before and does so here as well. Nietschmann's reply follows. A few comments on our part round out this installment of the discussion.*

*Missing from these pages is a response we solicited from Survival International USA, the respected indigenous-rights organization, which had initially agreed to comment on the issue. The complexity and volatility of the Indian/FSLN conflict, however, has delayed their formulation of an official position past **CQ**'s deadline time for this issue. Further material should be forthcoming in future issues.* —Jay Kinney

DEFENDING THE MISKITOS

ROXANNE DUNBAR ORTIZ:

ALONG WITH SEVERAL other well-known Indian advocates (*indigenistas*), I (also as an American Indian activist and writer) joined in a statement condemning the statements being emitted by Professor Bernard Nietschmann, of the Department of Geography at University of California, Berkeley. We stated (November 1, 1983), in part:

> We are shocked by the irresponsibility exhibited by the reckless, undocumented allegations of arbitrary killings, rape, looting, torture, and other serious crimes allegedly committed by Sandinista security forces against Miskitu Indian persons. Each of us are advocates of Indian rights and acquainted with the Miskitu situation and with Nicaraguan government policies. Though each of us have been critical on various points of the Sandinista government for various errors and attitudes toward the Miskitu people, we have found the Nicaraguan government consistently responsive. We regard as false all allegations of gross human rights violations in this situation.

This statement appeared in an ad in the *New York Times* on 13 November, 1983, and was signed by, among others, Dr. Guillermo Bonfil Batalla, the Mexican anthropologist, Indian advocate, and director of the National Cultural Museum of Mexico; Dr. Stefano Varese, Peruvian anthropologist; Dr. Miguel Barolome, Argentine anthropologist; each of these Indian advocates having been among the dozen signers of the historic "Barbados Declaration of 1972 on the Liberation of the Indians of the Americas," endorsed by the World Council of Churches. Also signing the statement admonishing Dr. Nietschmann were North American, Philippine, Italian, and other Mexican scholars including Dr. Rodolfo Stavenhagen of El Colegio de Mexico and Dr. Francesco Pellizzi of the Harvard Peabody Museum of Archaeology.

We do not conjecture about nor consider important the motives of Dr. Nietschmann, but we consider his statements, not merely exaggerated, but blatantly false, and, in fact, we can contradict with documentation his every allegation. The director and board members of the International Indian Treaty Council (the international arm of the American Indian Movement, which holds consultative status as an organization in the United Nations), as well as the editor and publisher of the *Navajo Times*, can also contradict Nietschmann's absurd allegations.

What we do know is that an integral part of the U.S. campaign of violence in Nicaragua's northern border regions has been a propaganda broadside portraying the area's native Miskitu Indians as victims of Sandinista "atrocities." In fact, the hardships which have indeed been suffered by the Miskitu people have been the direct result of a U.S.-funded and sponsored "dirty war" much like the one launched in Laos in 1962, which attempted to mobilize the Hmoung people. Mr. Ralph McGehee, author of *Deadly Deceits: My 25 Years in the CIA*, was a primary organizer of that CIA campaign, and recognizes the same program regarding the Miskitu people in the CIA dirty war against Nicaragua.

Painting by Nicaraguan artist Tomas Pena. He says the picture is about "Andres Castro, a popular Nicaraguan hero, who ran out of ammunition while fighting William Walker's troops; he picked up a stone and killed one of the American invaders. Andres' men followed his example and routed the American Goliath." The two paintings in this article are from "Inside the Volcano: Artists' Tour of Nicaragua '84" (Artist Tour Publications, 551 63rd St., Oakland, CA 94609), a narrative of 16 American artists' visit to Nicaragua.

The truth regarding the Miskitu people is that they have always disregarded the "international" border between Nicaragua and Honduras, which artifically divides their homeland, and which was set by the World Court only in 1960. Their homeland extends far into both Honduras and Nicaragua, and the Coco River, now designated as the border between the two countries, has always been the heart of their civilization. When U.S.-sponsored "contra" forces began to raid the Miskitu villages on the Nicaraguan side of the Coco River in late 1981, the Sandinistas evacuated the people from the area and sealed the border as a self-defense against the U.S.-sponsored invasion, and to protect the Miskitu civilians from being cannon fodder in that dirty war.

Miskitus fled in all directions, and thousands were then trapped inside Honduran territory (albeit Miskitu territory), and some have since been forcibly recruited by the brutal ex-Somoza National Guardsmen to carry out cross-border raids against Miskitu villages throughout the northeast quadrant of Nicaragua.

Initially the action was expected by the CIA to bring a Bay-of-Pigs-model uprising, which did not occur at the Bay of Pigs nor on the Rio Coco among the Miskitus. Only chaos and death resulted, which after all, may be the point of the CIA actions of this sort.

Truly, a nightmare has been created since early 1982 for the Miskitu people (as well as Nicaraguan people in the northwest segment of the country, where even a greater number of people have been evacuated, but without the accompanying propaganda regarding ethnic differences as in the case of the Miskitus). Fishing and farming have been disrupted by ceaseless raids on Miskitu villages and food shortages have resulted, as well as cultural disturbance. What's more, and perhaps the underlying purpose of the CIA action, is that the Sandinista campaign to promote the self-determination of the indigenous peoples of the Atlantic Coast has been impeded, but not blocked. While Nietschmann and Reagan propaganda portrays the Miskitus as victims of the Sandinistas, in fact it is the Sandinistas who have declared their support for the Miskitus, and all indigenous peoples' aspirations — full literacy and education in their own indigenous languages, universal health care incorporating native medicine and ceremonies, restoration of the region's wildlife and natural resources (practically exhausted during the 50-year Somoza dictatorship, most vividly described and documented by the same Professor Nietschmann in his 1972 publication, *Between Land and Water*), and autonomous political rights in the region as well as community land rights.

On June 24, 1984, the Miskitus met in assembly, their traditional form of political decision-making, with representation from each of the more than 300 Miskitu villages, and decided to form a new autonomous organization. Two days before, Dr. Mirna Cunningham, Miskitu medical doctor and head of health care for the Miskitu region, was installed as head of the region replacing Comandante William Ramirez, the non-Miskitu Sandinista leader who had headed the region since the 1979 overthrow of Somoza by the FSLN.

Those of us who have observed Sandinista initiatives and worked with the Miskitu people for many years believe the CIA program to attempt to discredit the Miskitu people who are working with the Revolution is an attack on the entire Indian movement of the western hemisphere which has surged since Alcatraz in 1968-69 and Wounded Knee, 1973. Indians of the Americas and indigenous peoples worldwide have carried on an international campaign to marshall support for our cultural rights, our land, our very survival, and our right to self-determination. We have appealed to the international community and it has responded positively. We now have a Working Group on Indigenous Peoples in the United Nations and will soon have an international covenant for the protection of our rights. We have worked hard to develop standards of international law upon which we can rely for protection. The Miskitu people have long been a part of this process, preceding the 1979 Revolution, and those same Miskitus are working productively within the Revolution presently. The standards we have achieved are perversely twisted by Nietschmann, who pretends to speak on our behalf, and by others who justify U.S. military intervention in Nicaragua as being "on behalf" of Miskitu or Indian self-determination.

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Safe resettlement communities or forced internment camps? This 1982 photo shows one of the clusters of houses that comprise Tasba-Pri, where thousands of Miskito and Sumo Indians now live. Events associated with the relocation of the Indians from contested border areas are one of the major sources of disagreement in northeast Nicaragua among those analyzing the Indian-Sandinista conflict.

BERNARD NIETSCHMANN:

ATTEMPTS TO COVER UP Sandinista repression of Indians may be a solidarity imperative, but they are losing credibility due to mounting non-partisan confirmation of Nicaraguan government human rights violations and increasing comprehension of what the Indians are fighting against and for. Roxanne Dunbar Ortiz's letter relies on the standard Sandinista position that accusations of human rights violations are false, anyone who says differently is part of some Reagan-CIA propaganda plan, the *contras* created the Indian problem, and the government really has pro-Indian policies.

The first part of her letter refers not to my *CQ* article but to human rights testimony I presented before the Organization of American States (October 3, 1983). Professor Dunbar Ortiz is too modest in saying that she "joined in a statement condemning" this testimony because, in fact, she drafted the statement, gathered the signatures, and paid the $30,000 for the November 13 *New York Times* full-page ad. (Where does money like that come from?) She says that the International Indian Treaty Council contradicted my (OAS) statements. Well, the IITC representative who went to eastern Nicaragua in December 1983 used sources like Jimmy Boppell, a Miskito who works in Sandinista Security and who has been accused by Indian resistance leaders and refugees of being one of the principal torturers in the Puerto Cabezas prisons. Indian villagers won't speak against the government to people who come and travel with the government (obviously, if the government representative is a known or suspected torturer).

Several outsiders have gone into eastern Nicaragua with the Indian resistance since my first 1983 trip, and they have confirmed and supplemented my OAS testimony (which Professor Dunbar Ortiz claims is "blatantly false"): Australian journalist Peter Day, Swedish journalist Fritiof Haglund, German film director Werner Herzog ("The atrocities are self-evident and you don't have to be on one side or the other — and politically I'm not — to see what's going on" *New York Times*, May 15, 1984), and three doctors from Doctors Without Frontiers. American Bishop Salvador Schlaefer — who came out of Nicaragua last December with 1300 Miskito rescued from an internment camp — strongly criticized the Sandinista government for harsh treatment of the Indians. And Moravian Reverend Joe Gray, who worked in Nicaragua, Honduras, and Costa Rica last December, found: "The government has made a pretense of acknowledging that it 'made many mistakes' in the removal and resettlement of people from the Rio Coco. But here in Sangnilaya they are doing the same thing all over again. Last July more villages were evacuated and burned down — homes, churches, schools, fruit trees, everything — so the people would not return.

". . . I believe that all of this resettlement activity is being done to eventually wipe out the whole Miskito culture. . . as one Sandinista comandante told us, to 'take care of the Atlantic-coast problem'" (*The North American Moravian*, June-July 1984, pp. 4-6). The OAS Inter-American Commission on Human Rights report on Sandinista treatment of the Indians verified many instances of "illegal killings," torture, arbitrary arrests, and a government massacre of 35-40 Miskito civilians at Leimus, December 22, 1981 (*New York Times*, June 8, 1984, p. 3; *The Washington Post*, June 8, 1984, p. A18). The Americas Watch investigation of human rights violations confirmed allegations of government-directed killing and torture of Miskito civilians and disappearances (Americas Watch, "Human Rights in Nicaragua," April 1984; "Human Rights in Central America," June 1984).

The government has a separate and repressive policy towards the Indians because most Indians don't support the government. The Nicaraguan government has continued its program of forced relocations of Indian civilians into internment camps (number 13 was created in May 1984), not to protect them from *contra* attacks as Professor Dunbar Ortiz claims, but to protect the Sandinista revolution from the civilian-supported Indian insurgency. If the Rio Coco Indians had supported the Sandinistas, the government would probably have armed them rather than force them into internment camps. (Why doesn't the government forcibly relocate thousand of Ladino peasants from border areas to protect them against FDN attacks?)

The Sandinistas have not promoted Indian self-determination, as Professor Dunbar Ortiz suggests, but have blocked and trampled it. The literacy and education campaign in Miskito, Sumo, and English was not promoted by the government, but was reluctantly permitted only after MISURASATA demands and demonstrations in 1980. The government is presently forming a new Indian organization led by Miskito Sandinistas and representatives from internment camps (Dunbar Ortiz's "300 villages" don't exist, more than half having long been burned down) in an effort to control Indian aspirations.

An untitled painting of an Atlantic coast homestead, by Milagro C.H., a Nicaraguan folk painter.

Professor Dunbar Ortiz ends her letter with a lot of "we's" and "our's" and says that I pretend to speak on behalf of one of those "our's." I don't know which "our" I am supposed to pretend to. I wrote about the Indian war in Nicaragua and about why they are fighting it. Nothing more.

JAY KINNEY:

ONLY ONE FACT SEEMS agreed upon by everyone in any discussion of the plight of Central America: those with the least — the peasants and Indians — are invariably the ones who suffer the most. Once beyond this simple and horrifying fact, agreement regarding specifics quickly breaks down as participants in the discussion circle their wagons into ideological clusters and take verbal potshots at each other, often utilizing opposing interpretations of the same historical incidents. In such a situation, the notion of an "objective" overview rapidly crumbles and one is left with the alternatives of either taking sides in the argument or hoping somehow to make it through the maze of propaganda, emotional appeals, slanted stories, and alternative realities, to emerge in the end with a very incomplete and imperfect sense of the truth.

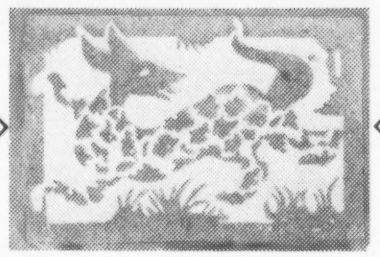
CoEvolution was originally receptive to Prof. Nietschmann's presentation of the viewpoints of the Miskito, Sumo, and Rama Indians struggling with the Sandinistas in Nicaragua because his years of direct involvement with the Indians and their culture indicated an expertise few others in the U.S. could equal. Perhaps even more important, however, Prof. Nietschmann's reading of the Indian/Sandinista conflict as an indigenous Fourth World struggle for autonomy seemed to transcend the familiar left-right interpretations of most public discussion. The prior appearance of his article and photos in *Akwesasne Notes*, the highly regarded Native American newspaper published by the Mohawk Nation, was additional assurance that many indigenous activists took his viewpoint seriously and were in essential agreement with it.

We have since rediscovered what should have been obvious from the start: that spokespeople for indigenous rights (including Indian groups, international human-rights organizations, religious groups, academics, etc.) are no more given to a single, collectively agreed-upon perspective than any other grouping of intelligent, concerned individuals. Among the Nicaraguan Indians themselves there are differing allegiances, a fact that contributes its share to the confusion. Prof. Nietschmann's views have put him at the center of a storm of controversy since he began speaking publicly towards the end of 1983. That controversy is ongoing, as the preceding pages indicate.

In the few months since *CQ* published Prof. Nietschmann's article, he has appeared with a similar piece in *Policy Review*, the public policy journal published by the Heritage Foundation, the conservative think tank. (*Policy Review,* Summer 1984, $4.00, from The Heritage Foundation, 214 Massachusetts Ave. NE, Washington, DC 20002.) This has given me a moment's pause as I've pondered the implications of finding the case for the Miskito warriors wedged in between a symposium on Sex and God in American Politics, including such worthy participants as Jerry Falwell and Phyllis Schlafly, and an essay by *Policy Review's* editor noting how much "better off" Americans are now than four years ago, because of Reagan's policies. Prof. Nietschmann has also appeared twice this year on the Christian Broadcasting Network's popular "The 700 Club," with host Rev. Pat Robertson. During his most recent appearance there in July, 1984, he portrayed the Miskitos' battle with the Sandinistas as "the barricade against the spread of Marxist-Leninism in Nicaragua and in Central America." In this video sequence, Nietschmann urged public support for further U.S. aid to anti-Sandinista forces.

Prof. Nietschmann is entitled, of course, to make his case for the Miskito warriors to any audience he pleases. However, at the point where an argument for Fourth World indigenous autonomy begins to be embraced by the far right as one more bit of ammunition for a U.S.-funded, CIA-directed shooting war in Central America, it would seem to be a good time to consider the following. Even the most profoundly nonorthodox perspectives, be they bioregionalism, indigenous autonomy, decentralism, anarchism, even pacifism, are capable of being utilized by the powers-that-be toward ends that betray the intentions of their supporters

At the conclusion of his article in *CQ,* Prof. Nietschmann noted four possible outcomes to the present Indian-vs.-Sandinista conflict. The most hopeful scenario hypothesized the Indian warriors and Nicaraguan government negotiating a resolution granting greater Indian autonomy, followed by cooperation between Sandinistas and Indians in repelling further "contra" incursions. This still seems the sanest route to an end to Indian suffering, while supporting further U.S. funds for anti-Sandinista guerrillas will only promote more bloodshed and suffering. There has been all too much of that already, and *CQ* in no way condones or supports it. ■



AN UNCOMMON BENCH

A SMALL BUILDING BY ARCHITECT CHRISTOPHER ALEXANDER AND ASSOCIATES

by Pete Retondo

I'D BEEN WORKING AS A CARPENTER for a decade when I became aware of some peculiar occurrences in my work, things for which I could find no logical explanation. One was that I started receiving messages about the everyday mistakes that plague building projects — the sort of mistakes that give rise to trade quips like, "Gee, I cut it twice and it's still too short." The messages were in the form of hunches, and once I started paying attention to them it had a remarkable effect on my ability to work without mistakes. A thought would come into my head like, "Wouldn't it be awful if, after making this cut I'm about to make, this vertical grain 2×12 ends up being an inch short." More often than not, I'd check, and sure enough — an inch short. I think those messages had alway been there, but I'd dismissed them as doubt and vacillation.

Another thing that started to nag at me was awareness of proportions. A piece of work could be flawlessly executed, even done both beautifully and cleverly, yet if something about the proportions struck me as off-key, it bothered me more than a big nick in the wood.

At about this time I was was introduced by a friend to Christopher Alexander's *A Pattern Language*. (**NWEC**, p.217). As is my habit with new books I opened it to the middle, skeptically read a page or two, and immediately set about reading it from cover to cover. Always very suspicious of the architectural profession, I was astounded to discover a text that both made sense on the level of common sense and had obviously deep intellectual roots. *A Pattern Language* was a breath of fresh air after years of feeling queasy about contemporary architecture, its steel and glass buildings totally out of scale to human proportions, its homes built to resemble mechanical drawings. I thought, "Someone has

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"Maybe the best book in The Next Whole Earth Catalog" *is how I described Christopher Alexander's* A Pattern Language *in 1981. Ernest Callenbach called it "The most important book in architecture and planning for many decades." It's a cookbook of the* kinds *of things that really make towns, buildings, and construction work — "light on two sides" in rooms, "pools of light," "anything over 5 stories high makes people crazy," "balconies narrower than 6 feet aren't used," "make sure the edge of a building is a thing, a place, not a line," "have fingers of city and fingers of country interlocking," "'picture' windows cut you off from the outdoors" . . . are just a few insights of the book from memory. People read it like a novel, up all night. They memorize whole sections involuntarily.*

Last year Irmine Steltzner, the keeper of our project called UNCOMMON COURTESY — School of Compassionate Skills, wanted to build a class around Christopher Alexander. In Spring '84 she brought it off, as here reported. If you want to see the bench, go to Fort Mason in San Francisco (a former Army base now part of the National Park System) and find your way to the restored Liberty Ship, the Jeremiah O'Brien. *To the right along the shore is a special nook sporting a celebrated piece of furniture.*

Carpenter and contractor Pete Retondo is a long-time political activist and former Rolling Stone *writer, now returned in his thirties to college (graduate school at the University of California, Berkeley).* — *Stewart Brand*

There are more details on the process, and the bench itself in full color, with additional comments by Christopher Alexander in the July 1984 Architecture *(AIA, 1735 New York Ave., N.W., Washington, DC 20006 [$26/yr]).*

DON RYAN

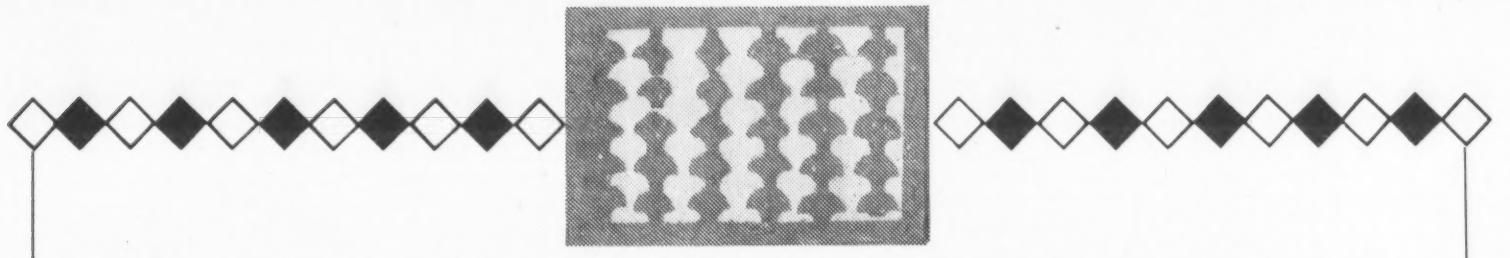
An uncommon bench collaboratively designed by Christopher Alexander and 23 friends. The objective was to make an ornamental seat that would be something worth fighting to save in 100 years. Made of poured concrete with inlaid green and white terrazzo decorations. About 20 feet long, it's four feet high at the crest.

finally come out and said what has been obvious to everyone, like the child in the fable of 'The Emperor's New Clothes.'"

Alexander evoked the same fable in his book, *The Linz Cafe* (Spring '82 CQ), which is mostly a picture book about a building built by him — a cafe attached to a design exposition in Austria. It struck me immediately — "This is an ordinary looking building!" If you know anything about contemporary architects, you know that in such a context he or she will strive to distinguish their work with the most unusual and stunning new effects possible. Yet here an architect, distinguished in academic circles and just beginning to make his way in the competitive world of built design, seemed to be satisfied with subtlety. In the midst of clattering egomania, the building itself spoke of an overriding care for the comfort and sensibility of the ordinary people who would use it. I was quite moved by that statement.

Last year I was fortunate enough to be able to attend a series of talks by Chris Alexander on the nature of harmony. (The course was in the Department of Architecture at the University of California, Berkeley.) In the course of those lectures, I began to see how those peculiar occurrences I'd encountered in my work might be part of a larger phenomenon Alexander had been pondering for years. He calls for a closing of the rift between the tangible and intangible worlds. At the hub of his ideas on form is a concept he calls "the field of centers." Like with holograms, any part of a living thing is a center that somehow echoes the whole being, itself a larger center. Created things can be living things if they become a field of centers. For example, the leg of a table would be a center; it may in turn be composed of a series of segments, each of which is a center; and the whole collection of legs and top must form a center if the object is to be alive. The more all of these centers support and help create each other, the more alive is the object. As we work to achieve this, the object comes alive like a musical instrument coming into tune.

These were the ideas which brought twenty students and practitioners of design to San Francisco from all around the country — from Massachusetts, Puget Sound, North Carolina, California — to take part in a workshop sponsored by Point Foundation's School of Uncommon Courtesy. After two weeks of effort, the workshop produced a two-tiered bench on a site on San Francisco Bay, overlooking Alcatraz. The bench is a gift to the public (a well-received one, judging from the thanks I received from a man I found sitting on it the other day, to whom I mentioned that I'd



been part of the group that built it). It's twenty feet long and curved slightly, so that those sitting at opposite ends and facing straight ahead can see each other out of the corners of their eyes.

Alexander believes strongly that we learn by doing things, by following an example, by trial and error. This belief follows from his notion that all matter in the universe is created out of "mind stuff," that it has an organic predisposition to fall into order and that if we watch and listen carefully we can align our efforts with that order. He alternately gave the workshop participants a feeling they were collaborating in the design, then reined them in and insisted they pay attention to his solution. I heard someone comment the first day, when ideas were in a formative stage, "Is this a design workshop or an exercise in collective decision making?"

The configuration and location of the bench were determined with concrete block mockups which let the design be felt. The creators sit in the work-in-progress and discuss the value of a second small seat on which one can sit and face friends.

JAMES SHIPSKY

Chris Royer, a Bay Area designer who helped organize the workshop, had this to say about the process: "I was very interested in seeing if a group could get together to design and build something that has a special spirit or life to it without having some one person who is the leader and who dictates the decisions . . . I think, more often than not, Chris has made the final decisions. Various people's ideas may have been incorporated in small ways, but at each point it was Chris who said, 'Yes, this *is* the way we're going to do it.'"

He has a reputation for being high-handed at times, but that quality was experienced by participants in different ways. Peter Gradjansky, a landscape architect: "Sometimes I found it mystifying and irritating, mostly because I want to learn to have the kind of eye that sees what's just right when I'm looking at things. When he just comes in and says, 'That one's good, that one's no good, that one's — no good, that one's okay,' and we don't get to talk about it, that's frustrating. I think, 'Gee, I'm just around him these few days, I want to hear some of the rationale behind it.' But I also realize that there *isn't* a rationale."

Geri Monosoff, a designer from Monterey, California: "I think the only time I've heard him in all these hours say anything that was the slightest bit edgy was to *me*, when I said at one point about that little table, 'It looks like a lady's hat box.' And he said, his voice was elevated, 'That's not helpful.' And I said, 'Tell me why?' I was acutely pained.

"Then he began to talk about what it takes to have a space for creativity, and what it does when something grating to others swells oneself. But his eyes stayed with mine until he saw that I was okay, and that the pain had grown from pain to learning. Then he went away. It was intuitive. If he had dropped his eyes and walked away from me at that moment I would have really been infuriated.

"He's never done that to any one of us."

Alexander has been criticized by his colleagues for attempting to create a cult, and has been derisively referred to as a "guru" in print. Mitzi Vernon, a design student at the University of North Carolina, Greensboro, felt disappointed that the workshop discussion "seemed too vague. There wasn't a lot of explicated reason for the decisions that were made."

Elias Velonis, director of an owner-builder school called Heartwood in Massachusetts, had a more sympathetic perspective: "Apparently his work in the last four or five years is in the *feeling* of things. It lapses into poetry or mysticism,

but you can't help it when you get to that realm. I mean, what makes Picasso put the eye right *there*?"

Because his ideas run counter to the mainstream, Chris is counted as a renegade. Still, there is a growing group of supporters of his approach. He was applauded at Harvard when, in the course of a debate with Peter Eisenman, he made the following statement about an architect who had designed a structure to be deliberately disharmonious: "I find that incomprehensible. I find it very irresponsible. I find it nutty. I feel sorry for the man. I also feel incredibly angry because he's screwing up the world."

Participants in the Uncommon Courtesy workshops agreed with him. Jim Shipsky, an architectural writer from Pennsylvania: "In the canon of modern architecture, what he's doing is not done. And he is very serious about what he is doing, about the importance of 'decoration' — I hesitate to use the word because 'decoration' is a pejorative term in design today. In modern architecture you don't use the word 'decoration' without preceding it with the word 'mere.'"

Annie Phillips, a Berkeley builder and designer: "The basic form of the bench is a very powerful experience. It took the space out there and completely changed it in the way he had been talking to us about it — creating a whole out of it. He talks a lot about how the design is *there* and just has to be discovered, which also brings up the question of the thing that is there, is it only *one* thing? It's a very interesting question because I fought to have the bench moved back a foot or something, and we finally did move it back, but I wanted it back a whole 'nother foot.

"There is a way that is right and you just have to use whatever powers you have to reach it. A lot of my attitude before was, 'Well, this is better than what most people would do,' or 'Oh, this is good enough.' Even though I'm a real perfectionist, I think that this is a whole different concept: there is a way that's going to work and you'll know it when you get it. It's not a gradation. I think that's a really valuable tool."

DEBRIEFING

PETE RETONDO: Do you have any comments about the workshop you've just finished?

CHRIS ALEXANDER: I've enjoyed myself tremendously so far, much beyond my expectations, actually . . . I think it's a beautiful bench. And I felt also that people somehow got a lot from the situation; again, beyond my expectations. I thought it was also an exceptionally nice group of people. By the way, you should understand that I certainly would not say this if it were not true. It's not inevitable — I just had a tremendous time. Just a great lot of luck, that's all.

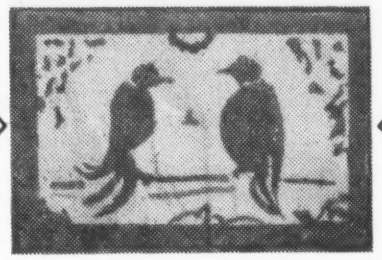
CHRISTOPHER ROYER

Dave Depper and Chris Berendes glue white diamonds of styrofoam onto the bench end. Terrazzo, a mixture of cement, marble dust, marble chips, and, in this case, green pigment is packed into the recessed areas. When it hardens the foam is picked out, and white terrazzo is packed into the remaining areas.

RETONDO: You told me that last Monday, the last day of the project, was one of the hardest workdays you've ever put in. What was that all about?

ALEXANDER: I thought it was going to be very, very quick. We had cut most of the styrofoam, and all I had to do actually was put it into those nine panels. So each one of these things had, I don't know — what, about fifty bits of styrofoam to go in there.

It was emotionally and physically arduous. The first thing was, I was on my knees for nine hours



straight. And there was a gale blowing, so I had to work under plastic. In other words, they just wrapped me up in a cocoon of Visqueen. Because, just the slightest breath of wind and of course it was just all over the place. Then the thing that I didn't realize was that I actually had to recreate each of those pictures. In other words, it wasn't at all just glue it in. I tried that, and it immediately went wrong, because the whole sense of space in the actual concrete was totally different from the drawings; even if the dimensions are off by 1/8 of an inch, the whole picture just starts to go differently, and sometimes you can feel it differently, and you realize that things have to be a little bit further apart in concrete than they do on a drawing, and all that *stuff*. So basically I had to recreate each picture. Plus I was burning myself with this glue gun. Aye, it was wild . . . The next twenty-four hours I was just completely out.

RETONDO: Why a bench?

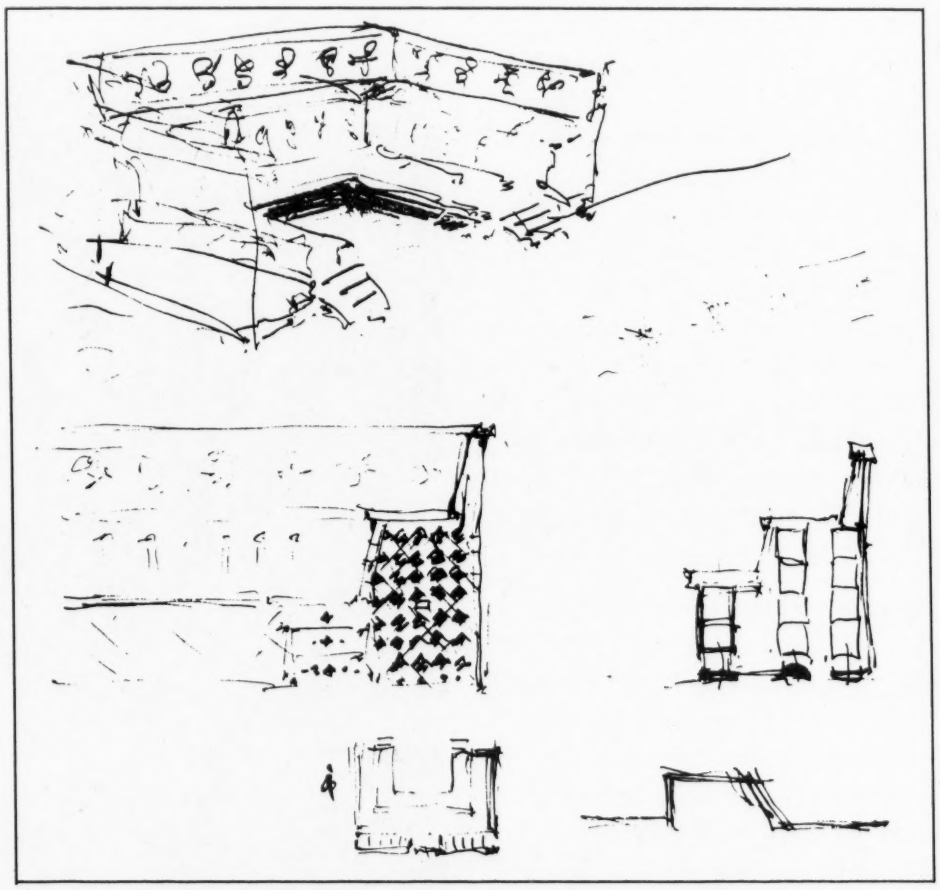
ALEXANDER: Certainly, I haven't got a special thing about benches. But it does have a combination of qualities which are not *that* easy to find. First of all, there's no way around the fact that it's a *building*, probably the smallest building it's possible to make. People sitting together also has a tremendous, a powerful sort of human reality . . . If you succeed, it immediately belongs to everybody in a very powerful way.

There are other things, I think, that are capable of working in somewhat similar ways. You actually can put that amount of energy into almost *anything*. For instance, you can put it into a piece of floor. (I'm going to build a floor in Fresno in a couple of weeks, a public masonry floor.) Sometimes in the old days people put that much work into a *ceiling*. We've almost lost touch with ceilings as being a very special object. In some times, people took a ceiling with *incredible* intensity. Occasionally you go into a room where somebody's done that and you realize what a colossal effect it has.

RETONDO: How did you approach designing the bench?

ALEXANDER: When I undertook the workshop, I made an incredibly rough sketch of an idea of a bench for that place. I was arrogant enough to think that we were actually going to build that thing I sketched. In doing the kind of thing I do, I have to pay attention to reality. If I'm wrong about something, I've got to know I'm wrong. But actually, I did *believe* that I already knew what to build there. Then the very first thing I did was ask people to lay out with some concrete blocks roughly the kind of thing I had sketched, and to my astonishment it was completely wrong!

RETONDO: How did you know that?



CHRISTOPHER ALEXANDER

A page of the quick sketches that Christopher Alexander brought to the workshop. Once the blocks were arranged in the actual space the builders diverged from the original notion of a square outline.

ALEXANDER: It simply was not harmonious with the place in a tremendous number of specific ways. This corner was abrupt, and it didn't correspond to how people naturally wanted to sit there, and that corner was abrupt, and the angle of that part of the seat wasn't looking in the right direction towards the water — in probably fifteen specific ways it wasn't right, which one could see immediately. And I wasn't the only person who saw it, I think everybody saw it. I had assumed, just to be quite clear, that we were going to do a mock-up, and therefore we were going to modify whatever I had thought

about until then. And in that sense I did come with an absolutely open mind.

I'm continually astonished by how wrong one is in the face of reality. It's funny. I'm probably the world's biggest teacher of this thing, but I constantly get surprised myself.

RETONDO: Would it be accurate to describe this process as a process of elimination?

ALEXANDER: No, I don't think that would be very accurate. There's elements of that because it is true that one's constantly rejecting things, and one has to reject very fast when it's clear that things aren't right. Let me be very specific, for instance, with what actually happened at the moment when the major configuration of that bench was made. After realizing that it didn't work, I tried to explain what I felt the problems were, and we had some talk about it, and moved chairs around, and moved blocks around, and tried to get some sort of empirical sense — how close together people wanted to be, and how far away from the sea, and looking in which direction. Then I said, okay, now come on in and let's go to the blackboard and sketch this thing out a little bit, and I asked each person to make a drawing. So then we had twenty drawings. I made one, too. Mine was no better than anybody else's. They were all lousy, actually.

It was a very, very complicated problem because there was the axis inviting you towards Alcatraz on the one hand, there was the slight concavity that one needed from the human point of view, there was the very peculiar fact that the railing is asymmetrical, you know, it's a right angle on one side and a forty-five on the other. It's a very difficult situation to put a nice shape into. And when we went back outside, I sort of thought about all this for a while, and then I very, very quickly put the chairs in that curve at one moment. I remember — several people were rather shocked by its simplemindedness. And I myself at first thought, this is too simpleminded. But anyway I'd better do it because I can see that it does the things that have to be done here, so I can deal with simplemindedness later. So I did it.

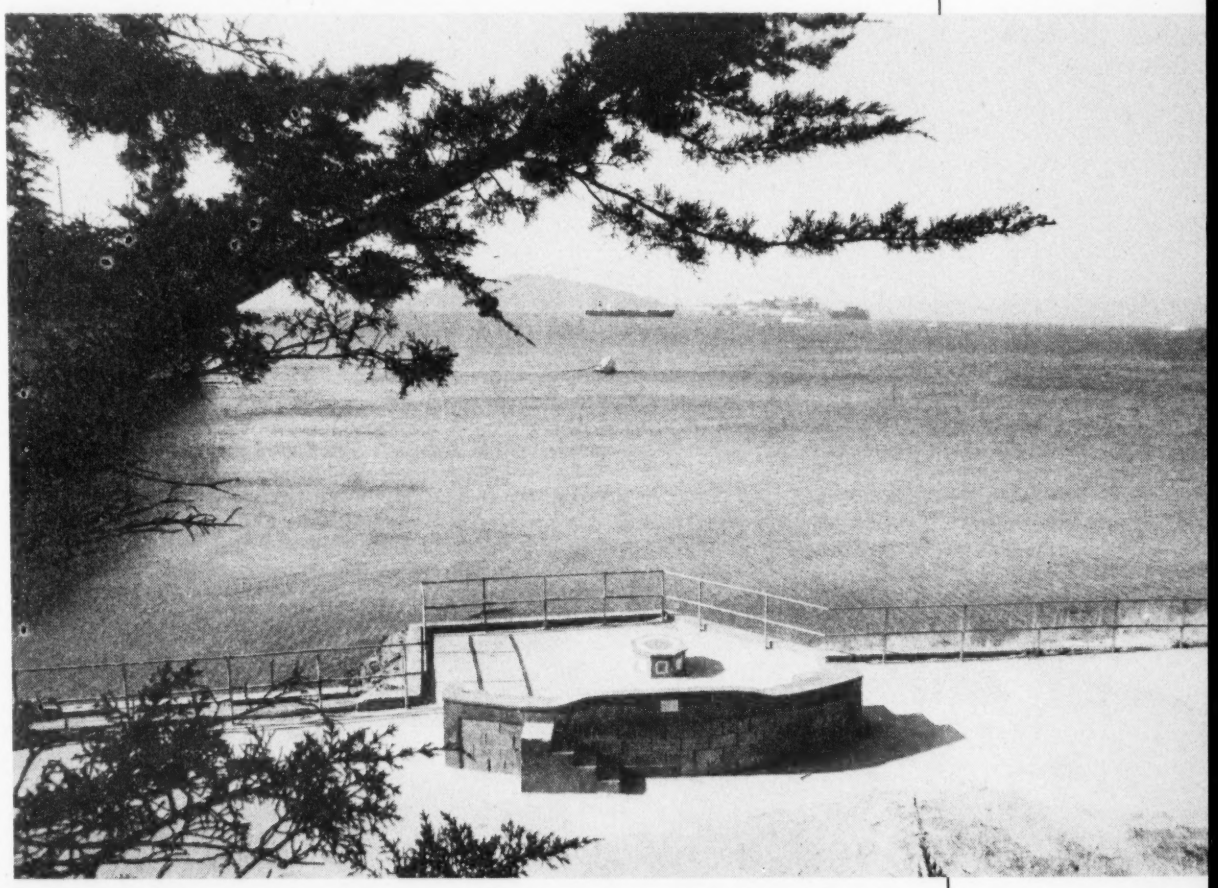
And then there was a bit of a gasp, because it was kind of *dumb*. In fact some of the students wanted to start moving stuff around, they started wanting to bring in all of those *elements*.

Then I had to get slightly aggressive and I said no, let's just leave it alone, let's just look at it for a few minutes here and experience this thing before we start messing it up. Gradually I realized that even though it was very simpleminded, it was in fact just right. So there's that kind of process as well.

You say, is it a process of elimination? Well, there are two other processes I've just mentioned. One is being very simpleminded. And then there's the process of aggressively hanging onto something.

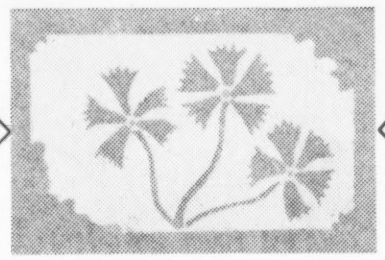
RETONDO: I know that you do a lot of work with cement, so it was natural that you would choose to do the bench out of cement.

ALEXANDER: I think the main thing I have to say about materials is this: I feel that when you go to the kind of trouble making something that I like to go to, then you have to meet two conditions. One of them is that it has to be permanent, because it just isn't worth putting this



KEVIN KELLY

The bench sits on the ledge of a rocky hillside, sheltered from the wind in a natural cove. The view stares in the face of weekend sailboats and Alcatraz Island. Far behind the old prison are the hills of Berkeley on the other side of the bay.



much heart into something if it isn't fairly well made, in the sense of having a long life. And the other thing is, it has to be very *sensuous*, because any material object *has* to be. Now if you use concrete by itself, it's very difficult to be sensuous. Being able to introduce the marble dust, which is much colder and has a more polished surface to the touch and also a beautiful jewel-like quality — that's essential. If one were to do the same in wood, it would involve higher levels of skill — first of all to make the thing well enough so that it would have the same kind of lifetime. And secondly, to be able to introduce that sensuous quality also requires tremendous skill. People sometimes assume that wood is an innately sensuous material, but I don't think so.

I definitely don't have an innate preference for concrete over wood, or anything like that. I love many, many materials. I'm actually beginning to get a renewed interest in wood, for a rather minor reason in a way, but a realistic one — that is, because I deal directly with Oregon lumber mills, I've come in contact recently with the possibility of buying incredibly beautiful and very, very massive pieces of wood at amazingly low prices.

RETONDO: Did you learn anything about the nature of form in making this bench?

ALEXANDER: I did learn one very interesting thing, actually. If I compare the bench and the little octagon, the little octagon was torture. You remember that I first cut out a blossom shape — I mean, it was a *nightmare*, because it wasn't right, and we tried endlessly different things, and everybody was getting fed up and grumpy — this was the second weekend. And actually I was in despair. The bench came fairly easily. In a matter of hours, there we were, everybody felt very happy, it was comfortable and just right. The octagon thing was horrible. Anyway, we just kind of stuck our teeth into it and grabbed on and kept going, kept going. I had to make the decision the second Sunday, and all Saturday we'd been wrestling with it, it didn't work, we had tried *everything*. Then I realized in the middle of the night that the octagon shape, even though it was a more *formal* shape, was the thing that left Alcatraz and the Bay alone the most perfectly. So it was most mild and kind to the wonderful surroundings. That interested me. I'd known about such things, which were certainly very well known a few hundred years ago. It's surprising, actually that that would *leave everything alone* better.

RETONDO: A lot of people commented to me that they were most impressed with the decorations. They all used your word — having gotten "permission" to decorate things. I don't know if "decorate" is the right word, by the way —

ALEXANDER: Yeah, it's a slightly unhappy word, because it has connotations, from *our* time, which make less of it than I think it really is. I have a rather peculiar set of beliefs. I think that when one makes things of such a kind, you experience a healing of your own soul. This business about the field of centers does not stop at the gross scale of spatial and physical organizations. To create a structure that has the quality, what we'd call "ornamented," is like eating food, it actually nourishes you.

RETONDO: Do you think it's absolutely essential?

ALEXANDER: To go to that level of ornament, and the more intricate level of organization? I believe it's essential, yes. I don't think, by the way, that *everything* has to be ornamented. Sometimes sparseness is a tremendous virtue. You have to have a balance of the two, so I don't think it's essential in that sense. I think, for instance, that if one were in a place where every single object had roughly the same level of ornamentation, it would be quite frighteningly ghastly. Even if you think of that place out there — after all there's the old metal railing and there's a little concrete upstand, and there's a concrete slab, and there's the chain-link fence and so forth — if every one of those things had ornament on this level, it'd be completely screwball nuts.

RETONDO: About the pictures in the nine panels, done with the marble dust compound — is this the first time you've done that sort of thing?

ALEXANDER: In such a realistic way, yes, I think it is. In a way, I don't know that I ever *dared* to do it before. It wasn't because I didn't feel it was the right thing to do. I think, luckily, we've brought it off.

There's a form of drawing that I was trying to teach to the few people who were doing drawings with me, where you draw living things from the point of view of the field of centers. You're simultaneously representing it, but you're actually getting its *life* from the field of centers, not from so-called "making it life-like." If somebody says, draw a life-like dog — in our time, that has come to mean a certain sort of thing —

RETONDO: Norman Rockwell.

ALEXANDER: For example, yes. Then there's a more sophisticated version of Norman Rockwell,

other artists who are able to draw a life-like dog; but it gets its life-likeness from being a St. Bernard, or a Spaniel, or Pekingese, or whatever. But there's another way, completely, to interpret what it means "to make that thing live." And that is, whether you can get the configuration of the animal to produce a field of centers in the space where it exists. Of course, a living thing is entirely made up of the field of centers, anyway — a *real* living thing. But to produce it in a drawing of a bird — it's completely different from drawing a life-like bird.

I can show you this if we were looking at the actual panels. For instance, these green swatches or whatever you want to call them, on the body of the dog — they don't resemble the particular markings of a particular species of a dog. What they are is a way of making this body solid by having a perfect balance of green and white in which both are continuously positive space all over the body of the dog. On the final panel, we have some blades of grass underneath the dog, and I put some other blades of grass pointing downwards from the sky, right near the head of the dog — again, because it produced the right balance of centers. So that if the drawing succeeds and comes to life, it will be because of this, and not because it's a particular species of dog, and so forth.

DON RYAN

The prancing dog that plays in the center panel. The sketch was taped to the unfinished bench, cut out of styrofoam, glued in separate pieces to the rough concrete, and rendered solid as marble-chip terrazzo.

So I think the first thing I mean by using that phrase refers to the childlike part of yourself, which is prohibited, basically, by adult society. The second answer — these are terrible answers because this is such an enormous topic you've suddenly opened up — is to take the phrase quite literally. Having things touch you in your heart — it's the sort of a phrase that is pretty much reserved for certain kinds of private matters in normal everyday experience, for things that have to do with your family, maybe — wife, children, brother, parents.

RETONDO: Along these lines, some of the words and phrases you use have a special meaning for you. For example, what do you mean by "heart" when you say something like, "You must feel it, in your heart?"

ALEXANDER: One could talk about that question for hours.

I think there are two very quick answers I could give. One is, I feel that we have been burdened by too much sophistication and too much thought, too much intellectual imagery. Our very basic, simple responses to things have been obscured. Various moments that occur in such contexts clearly do touch you somehow in your heart, and everybody knows what that means. I think it's pretty rare for people to realize that the physical world around us can communicate with us on exactly that same level. And if we once admit that possibility, and then start seeking out those things which move us in exactly the same way — that a very intimate moment between a parent and child might — it opens the door to completely new ways of looking at objects, choosing them, feeling them, and making them. ■

NEXT TIME: Another summer project led by Christopher Alexander is scheduled for the summer of 1985. Time, place, and adventure are currently undecided. Supply your name and address to Irmine Steltzner, 27 Gate Five Road, Sausalito, CA 94965 if interested. You will be notified when the particulars of the class are firm.

Building Your Own House

Some of the best news in years is the success of the Owner Builder Center in Berkeley, California. Not content with the classes that have taught thousands of folks to build, these energetic folks have commenced to publish a series of housebuilding books. The first, Before You Build, *I extolled profusely in the Spring '84* **CQ**. *This one I also extoll with enthusiasm. In contrast to just about any other building book, this one is written from the standpoint of the student. Watching countless students make the same mistakes over and over has led the author to cleverly accent the tricky parts he knows from experience are likely to make trouble. In addition to the expected instruction, he answers the questions he knows you will ask: "How accurate do I have to be here?", "What will the inspector want to see, and when?", "What if the board has a curve in it?". The answers inspire a well-founded confidence. It's what you need to know to get the foundation in and the frame up. (Later books will guide you through the rest of the intricacies leading to that happy day when you move in.) All this is jargon-free, nonchauvinistic, well illustrated and liberally festooned with sample worksheets, schedules, and checklists. Exceptionally fine.*

—J. Baldwin

Using a temporarily nailed block and a wedge to force a bowed roof deck board tight against the lower one.

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On the East Coast where there are fewer large trees, and therefore fewer large timbers, girders are usually built up from nominal 2-inch stock, nailed together well to act as one piece. Because of the opposing grain patterns created when using different pieces of stock, the built-up girder is actually stronger than the one large, solid piece of girder stock. You can often work the bows and crowns out of the built-up girders by nailing boards together in such a way that their bows point in opposite directions.

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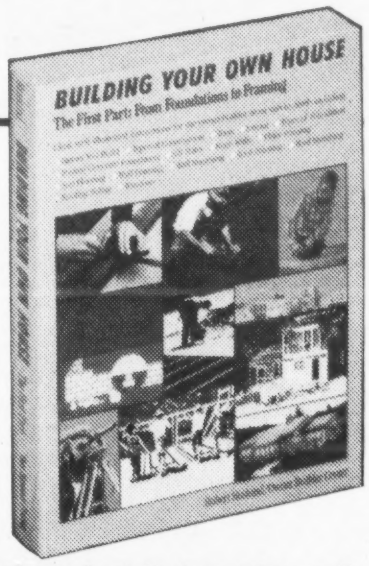
Step 1
Temporarily Nail on the First Course of Roof Sheathing

Margin of Error: Perpendicular to rafter—*exact.*

Most Common Mistakes: Falling off the roof; aligning course with edge of roof rather than perpendicular to rafters; plywood wrong side up; nailing intermediate rafter that becomes the next course's edge rafter.

Building Your Own House
(The First Part: From Foundations to Framing)
Robert Roskind
1984; 440 pp.
$25.95
postpaid from:
Ten Speed Press
P.O. Box 7123
Berkeley, CA 94707
or Whole Earth Access



Building the Alaska Log Home

Yas, yas, another log-home book, and why should an Alaska log house be any different? Maybe it's the fierce individualism that seems to permeate anything that has to do with Alaska — folks go there to do things their way. Maybe it's the irrefutable climate — you have to be right or you freeze. The homes shown here (in enticing color) are masterpieces of the Logsmith's Art. No funky miner's cabins for these folks. The book isn't funky either; it's surprisingly slick and includes lots of bush-living lore mixed in with the competent instruction. Yet the author specifically avoids the usual log-home fantasy hype that gets so many seekers into trouble — he makes it sound like the hard work that it most assuredly is. If you are among those vulnerable to the lure of log-house making, this book is certainly part of your homework. Especially if you live in the North Woods. —J. Baldwin.

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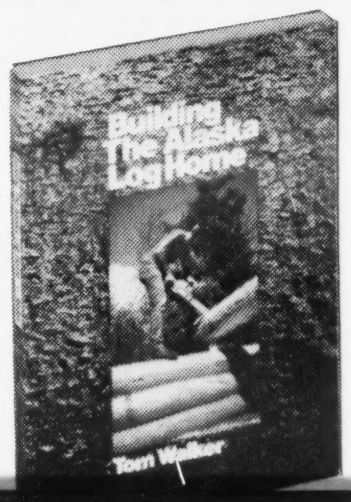
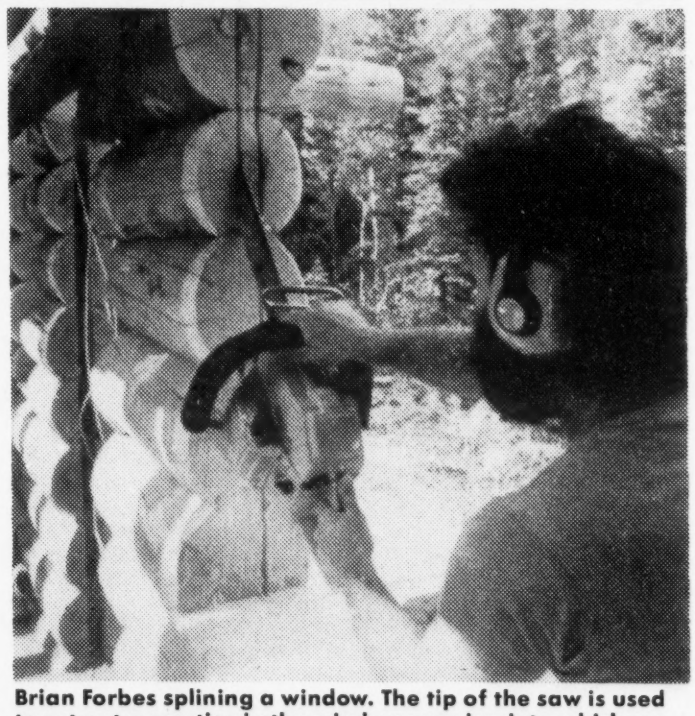
The whole idea of scribe-fitting is to match the upper log to the shape of the lower log. The scribe, one with a double level attachment, becomes an important, almost indispensable tool here. With it, the logsmith transfers the shape and contour of the bottom log onto the upper log. Thus, the quality of the scribe has a great deal to do with the efficiency and speed with which this work can be done. In essence, we are making a log-long notch, with the top log being notched to fit not only at the corners, but to the entire length of the log below. The log obviously cannot be hewn any better than it is marked.

Building the Alaska Log Home
Tom Walker
1984; 184 pp.
$20.95
postpaid from:
Alaska Northwest Publishing Company
P.O. Box 4-EEE
Anchorage, AK 99509
or Whole Earth Access





Brian Forbes splining a window. The tip of the saw is used to cut out a mortise in the window opening into which an upright 2 x 4 is placed. The cut at the upper corner is the most dangerous cut that can be made with a chainsaw on the entire project.

Builders Booksource

This imaginative and remarkably complete catalog of books having to do with building is tempting; my checkbook seethes as the pages pass. Subjects covered include multiple listings on codes, earthquake matters, lawsuits, steel, soil mechanics, architectural styles and hotel interiors. In fact, I am unable to think of anything that should be in here that isn't. Feast your minds, folks. Lucky Bay Area denizens can also visit the store. —J. Baldwin
[Suggested by Susan Nolan]

Builders Booksource
Catalog **free** from:
Builders Booksource
1801 4th Street
Berkeley, CA 94710

The New Science of Strong Materials

The predecessor to the still-unsurpassed ***Structures*** *by the same author (****NWEC*** *p. 221), is back in print as a revised edition. If you have the old edition, the revisions aren't enough to justify buying this one. But if you've not seen this book at all, or would like to add to what you've learned in* ***Structures****, then I recommend this book highly. The two books taken together must be the easiest introduction to basic structure available. Lucid, witty, nonmathematical, intuitive, and generally nifty, these books are among my favorites, demonstrating that complex subjects can be made accessible to ordinary mortals.*

—J. Baldwin

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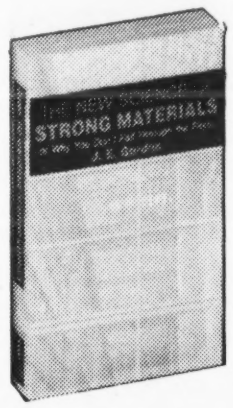
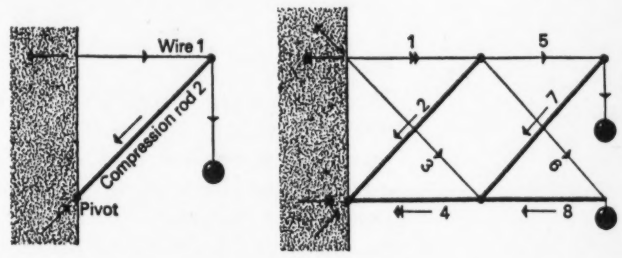
Any two solids can therefore be glued together if we can find a liquid which will wet them both and then harden. The difficulties which arise are practical ones. Wood can be glued very well by wetting it with water which is subsequently frozen. Such joints are said to pass most of the tests in the specifications for wood adhesives. Hide glue or carpenter's glue may be considered as a variant on ice in that the melting point is raised to a more practical temperature.

The New Science of Strong Materials
(or Why You Don't Fall Through The Floor)
J. E. Gordon
1976; 287 pp.
$9.95
postpaid from:
Princeton University Press
41 William Street
Princeton, NJ 08540
or Whole Earth Access





Beam theory — a beam may be considered as made up from a number of separate panels.

Furo Tubs

These are Japanese hot tubs, not to be confused with California hot tubs. Furos are very small, one person wooden baths, filled with gaspingly hot water (up to 120 degrees Fahrenheit). You scrouch down in them and boil off the dirt and worries. In Japan it's a daily ritual. These tubs are loaded from the household hot-water spigot and emptied after five or so uses, avoiding usual hot tub upkeep. Ones here are American crafted.

—Kevin Kelly

Furo Tubs
$325-$789
Information from:
Hotwater Works, Inc.
P.O. Box 401
East Lansing, MI 48823

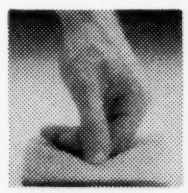
Soft Bathtubs

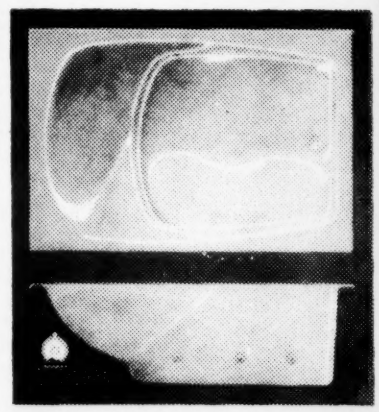
Some time ago a reader pointed out that while our bodies are fragile, the bathtubs we lower them into are very hard and metallic; said reader wanted a soft alternative. Two sources recently appeared: both produce fiberglass shell tubs faced with foam cushioning. Besides the pleasure of no longer being an egg in a galvanized bucket, the tubs hold heat longer by virtue of the foam's insulative properties and are supposedly slip resistant. Prices are somewhat higher than already-high enamel tubs. Whirlpool and models for the handicapped are available.

—John Benecki

Soft Bathtubs
$1,072 and up
Information free from:
The Soft Bathtub Company
P.O. Box 81125
Seattle, WA 98108

Cushiontub
$400 and up
Catalog free from:
Facetglas
Box 10067
Rockhill, SC 29731





The Doublewide Bathtub, as its name implies, is longer, deeper, and wider, large enough for two people to lie in it side by side comfortably or to sit face to face in corners specially shaped for just that purpose.

Keeping the Cutting Edge

A man who uses saws a lot tells us how to sharpen them. His is not the way of little gizmos, but more the way of the artist. Do it by eye and by feel so you learn the skills. He discusses hand saws, various power saws and even the giant cordwood saw blades that some folks are restoring these days. If you sharpen lots of blades, the homemade device made a long time ago by the author's father is worth the price of the book; it's clever and plain — good Down East stuff like the rest of the advice given here.

—J. Baldwin

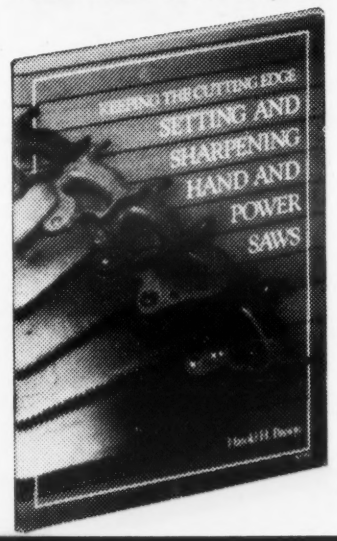
•

I suggest that right now you dig out a needle, and with it check any handsaw you possess to see if it has the proper set. Hold the saw, teeth up, with the small end in a vise or resting on some stable surface, and the handle, at your end, slightly elevated. Lay the needle in the vee between the alternately offset teeth, near the handle. It should slide as though it were riding in a trough, all the way down to the lower end. And *that* is the proper set.

•

Suppose that the saw you just filed ended up with all the short teeth on one side. Then that side can't possibly do its share of the work. Even if you couldn't tell the difference by eye, the unevenness would show up the minute you tried the saw in a piece of wood. That it would cut in a circle like a coping saw should come as no surprise.

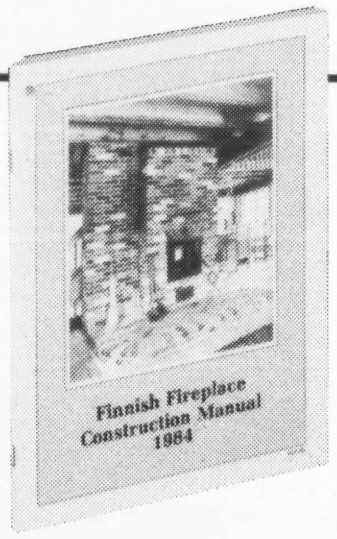
Keeping the Cutting Edge
(Setting and Sharpening Hand and Power Saws)
Harold H. Payson
1983; 30 pp.
$9.45
postpaid from:
Wooden Boat Magazine
P.O. Box 78
Brooklin, ME 04616
or Whole Earth Access



Finnish Fireplace Construction Manual 1984

Nice books extolling the virtues of massive masonry woodstoves head you in the right direction, but don't lead you by the hand past the potential disasters. Building one of these monsters is tricky business — you must allow for expansion, and must not build pockets that could trap explosive or noxious gases. This book, by an acknowledged master of the art, is a minutely detailed, illustrated and genuine manual. It really does get down to the tiniest moves, and that's hard to do when one is psychologically involved with tons of material. I expect this manual will have the desired effect: lots of Finnish fireplaces will now be built, and they'll be good ones. — *J. Baldwin*

Finnish Fireplace Construction Manual 1984
Albert A. Barden, III
1984; 65 pp.
$17
postpaid from:
Maine Wood Heat Company, Inc.
Box 640, RFD 1
Norridgewock, ME 04957



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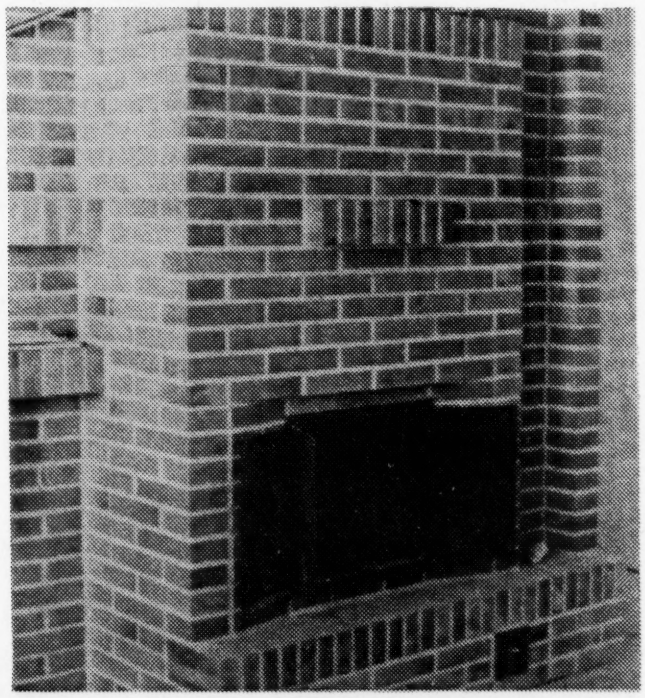
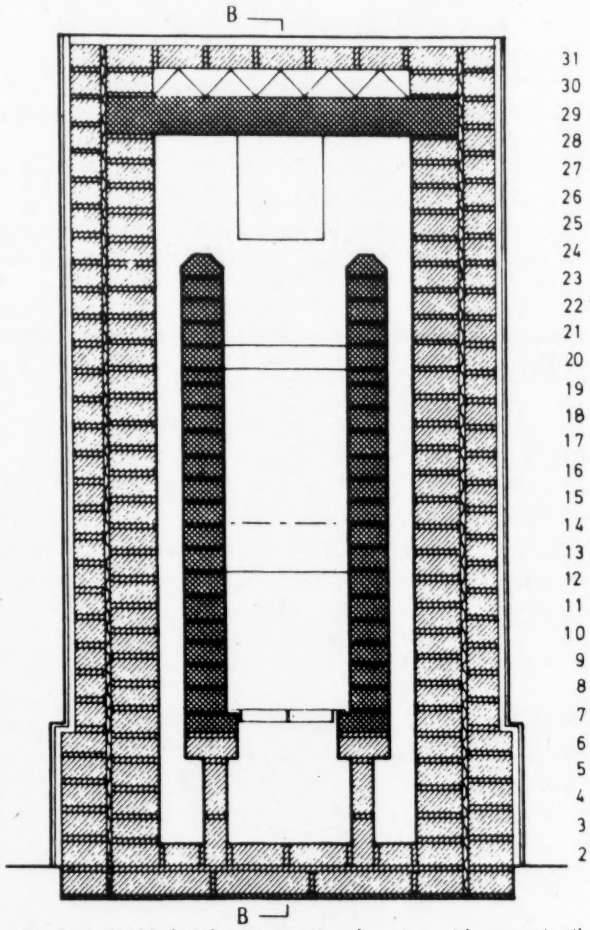
Mortar

Modern cement mortars are not appropriate for masonry heater inner core construction and are never used in Europe. Traditionally, European masonry heaters have always been constructed with clay-based mortars. The mortar we have found is a high quality, clay-based mortar called Uunilaasti, made in Finland. With care, we find it possible to build our standard heater in such a way that only a single bag of the special mortar, at an approximate cost of $30, is required. For those working with the mortar for the first time we recommend that they buy two in order not to run out at some critical point and have to delay work while waiting for supply.





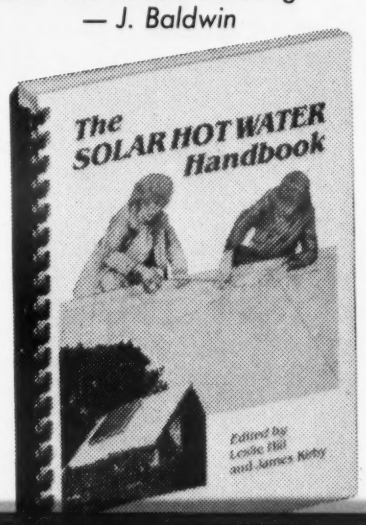
Modern double brick construction drawing with ceramic tile facade. Credit Heikki Hyytiäinen, Finland's foremost leading heater designer and historian, and the magazine Avotakka.

A modern Finnish Fireplace heater built in new housing in Finland as the primary heat source for the home. Government financed mortgages require a minimum of one masonry heater and one masonry chimney in each new home. (Note the 5″×10″×2½″ approximate size of the standard Finnish brick module.)

The Solar Hot Water Handbook

This should certainly be out in the pickup of every would-be solar hot water system installer. It is by far the most detailed procedure for a successful, long-lived professional job I've seen. Information like this is hard won, the result of much teeth-gnashing and despair. Pro or amateur, you'll learn a lot here. The trouble-shooting sections are super. — *J. Baldwin*

The Solar Hot Water Handbook
Leslie Hill and
James Kirby
1984; 139 pp.
$22.50
postpaid from:
Solar Alternative
71 Main Street
Brattleboro, VT 05301
or Whole Earth Access



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Tempering or Mixing Valves

This valve is used to add cold water to any flow of water from the storage tank that exceeds a preset temperature, usually between 110° and 140°F. A tempering valve is required on all solar domestic hot water systems to protect users from being scalded. It should be installed 12 inches below the hot water outlet with cold water entering from the bottom. A check valve should be installed to prevent thermosiphoning. The heat-sensing element of a tempering valve must be removed before soldering and replaced afterwards. Soldering temperatures will ruin the sensing element.

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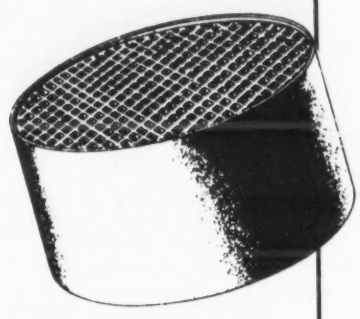
Sensor Location

The collector sensor should be placed where it will sense the hottest point possible, and the storage sensor where it will sense the lowest temperature possible.

CATALYTIC WOODSTOVES

by J. Baldwin



Corning's catalytic combustor, which typically contains 25 cells per square inch.

Righteous, eco-chic and economical as they may be, woodstoves have problems with creosote and smog. The thick pall of smoke hanging over certain Vermont towns on a cold winter night makes the LA sky look like crystal by comparison. Indeed, many local governments are in the process of passing tough anti-pollution laws that are aimed directly at the woodstove user. A hostile attitude towards stoves has been exacerbated by a large number of chimney fires. On the other hand, some studies have shown that about one-fourth of U.S. homes are wood-heated. What to do?

The modern "airtight" woodstove has proved to be a lot better than most of its predecessors, particularly fireplaces. But the very airtightness that makes them more efficient also makes them very good at coating chimneys with dangerous deposits. The relatively cool exhaust has also proved to be noxious as well as evil-smelling. The catalytic devices introduced over the past few years purport to alleviate these problems, while at the same time upgrading the efficiency as much as 100% over noncatalytic designs. That efficiency also means less pressure to cut trees.

Unfortunately, many of the first catalytic stoves were unreliable in a fashion indicating insufficient developmental engineering. The converters themselves crumbled or became contaminated. Sometimes they didn't get to the point of converting the smoke into useful heat at all. Operating procedures were unfamiliar and fiddley, with mechanical failure the price of ineptitude. The atmosphere of distrust was made worse by an obviously overheated advertising campaign making wild claims.

As with most new industries, things sort out after a while. The charlatans have largely left the scene. Advertising is closer to the truth. Designs have become sufficiently sophisticated, and operating rituals have been developed. Fortunately, the catalytic combustors, properly installed and used, really do work. In fact, many communities now require the devices. Retrofit kits are available for many existing stoves.

The problems with combustor failure appear to have two main causes: firing up a very cold stove too hot too soon, and ruining the catalyst with lead — usually from burning old lead-painted wood. Newer combustors have stainless steel rings that hold them tightly together even if they crack. (Look for that ring in any stove you buy.) But you should budget a catalyst replacement about every two years. That works out to about $50.00 a year, which isn't bad considering that you will not have to clean your chimney as often, and you'll be using maybe 25% less wood than a non-catalyst stove. Those who need a fire to last all night will also like the extended burn times that the efficient stoves develop — even at low temperatures with the dampers shut.

Proper operation should be learned and adhered to. I've heard of trouble being caused by guests who didn't know what to do. It might be a good idea to post the directions near the stove for ready reference. It's also smart to buy a name brand with a reputation. The better brands have features that tend to prolong the life of the catalyst and make the stove less tricky to use. There are so many brands that I couldn't honestly recommend any one, but generally you can bet that a stove with heavy construction and good workmanship and a name you've heard of will be OK.

The add-on combustors are another matter. How they are designed is very important. They should have plates that protect the combustor from direct flame, and it's best if they have a diverter for starting purposes. Some have secondary air intakes, which are probably necessary for good performance. Overall efficiency will depend not only on the device, but on how well it cooperates with the stove you're installing it on. Some of the more experienced dealers already know which combinations work. I expect to see a useful book this year or next, as field information collects into reliable wads. Meantime, I think a certain conservative caution is still in order when buying, though not when accepting the idea; it's undoubtedly the way wood-burning is going to go. ■

A Handbook for Inventors

So you have an idea. What next? For 90 percent of the folks with a good idea for a product, what's next is failure — usually attributable to ineptitude. (I can personally vouch from sad experience that the sharks are many.) This savvy book is a useful guide for those who dare to bring their brainchild to the market. In contrast to many other books of this type, the author avoids rah-rah success stories that don't tell you what the protagonists really *did. He prefers to concentrate on the strategies and tactics that are necessary for dealing with the realities of business. His advice is just what you need to hear, and it's presented in a friendly manner that's easy to assimilate. That's important, because when you're in somebody's office and have to make a decision on your feet, you won't be able to consult a manual — you'll have to have your moves right there in the top of your mind.*

—J. Baldwin

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A lot of the trouble can be prevented by starting early, long before you are ready to submit a formal application or test item. Like building codes, approvals vary in different states and regional areas. It is wise to write to the state office relating to your product (e.g., health, energy, automotive, building, fire, safety), asking what agencies you will need approval from to market in that area. Cities such as New York and Los Angeles have difficult, time-consuming, and expensive approval procedures on many products, so it is better not to plan your initial sales there.

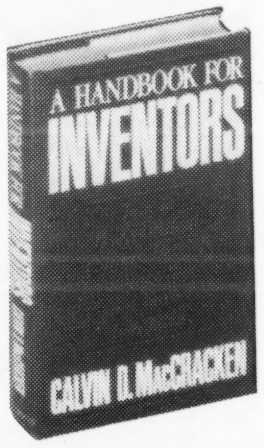
•

The great majority of people with bright ideas are so heavily committed to jobs, careers, education, and/or family support that they cannot afford to commit themselves to the full-time venture their invention requires. It has taken a lot of time and effort to come up with a working prototype, a patent application, and, often, financial support from family or friends, but for some reason the next step seems to be a problem. For example:

1. The market for your invention may be too small to make your effort worthwhile
2. The expertise or equipment needed for development may be too specialized
3. Your invention is not proven enough to license
4. You cannot afford the time
5. Your enthusiasm is beginning to fade

If you intend to be an occasional inventor rather than a professional one, or if you intend your idea to be a means to an end, such as getting you into marketing, which you prefer, then contracting out the development and possibly the manufacturing as well is a wise move.

A Handbook for Inventors
(How to Protect, Patent, Finance, Develop, Manufacture, and Market Your Ideas)
Calvin D. MacCracken
1983; 219 pp.
$16.50
postpaid from:
Charles Scribner's Sons
Special Sales Department
597 Fifth Avenue
New York, NY 10017
or Whole Earth Access

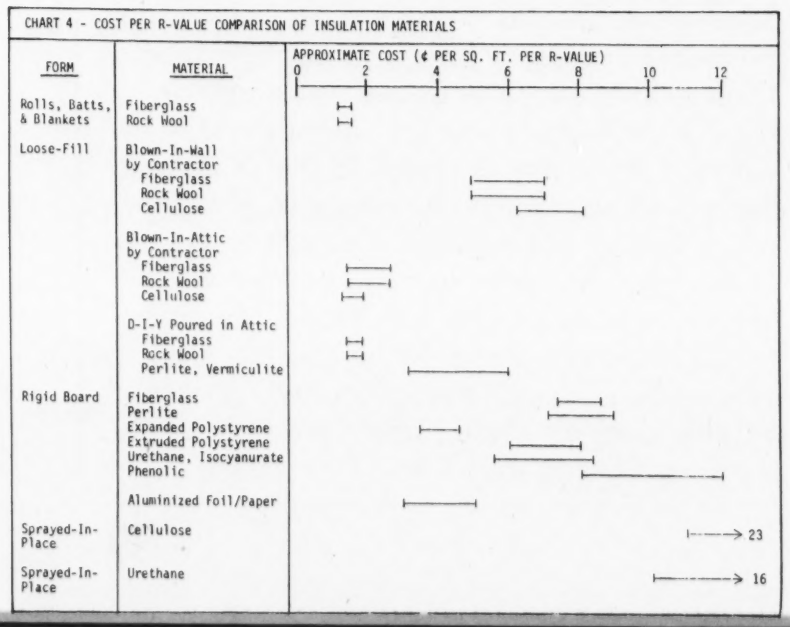


Rodale Product Testing Report: Insulation Materials

"Give a customer more than three choices and they won't buy anything," advised an old haberdasher I once knew. I've often wondered if the bewildering array of insulation types, with their claims and counterclaims, has caused folks to just forget the whole thing for a while. Even specialists don't have all the answers. And what about the ratings printed on the packages or on the insulation itself? Can you rely on those? Government regulation has helped a bit, but we know about those guys, don't we — how about those EPA gasoline mileage figures?

Enter Rodale's test lab. They've assessed all commonly available insulations and present their findings in this crudely produced but very informative booklet. The many types are compared directly, including performance-per-dollar and the range of deviation from claims that may be expected. Just what we need. This is backed by a sharply chosen bibliography, lots of field-tested advice on installation, and plans for a homemade thermography device that'll tell you where the heat leaks are in wooden construction. All this densely packed information is a bargain at the price.

—J. Baldwin



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Do-it-yourself thermography represents the low-tech end of the thermography spectrum: almost any homeowner with a few simple tools and a few hours of time can use this technique. The basic idea is to measure *surface temperatures* on the inside of the wall in question, and compare them against *air temperatures* inside and outside the house. Actually, *any* thermometer or temperature-measuring system is suitable provided it can be read with a resolution of $\pm 1/4^{0}$ F or better, and has a thin, flat sensing probe that can make good thermal contact with a planar surface (such as a wall).

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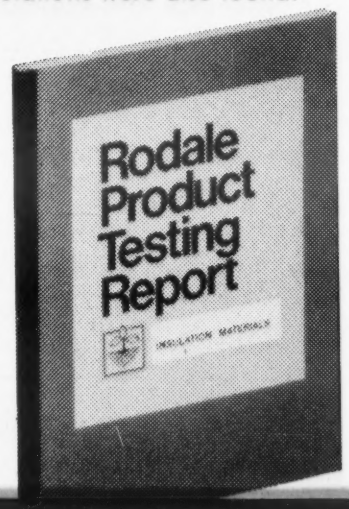
Fiberglass and rock wool, both of which have been on the market for many years, were called into question when the Department of Energy found that many samples they tested fell far short of the R-value ratings set by the manufacturers. In one test of 30 fiberglass batts rated R-19, the R-values measured by DOE averaged only 17.2; only four of the samples actually exceeded R-19, and the worst specimen reached only R-13.5. Problems in the R-value testing of other insulation materials, including cellulose-fiber loose fill insulation, cellular plastic foams, and reflective foil insulations were also found.

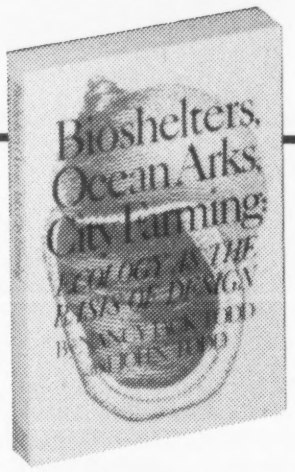
Rodale Product Testing Report
(Insulation Materials)
Robert G. Flower
and Suzanne Ebbert
1982; 92 pp.
$10
postpaid from:
Rodale Press, Inc.
P.O. Box 451
Emmaus, PA 18049



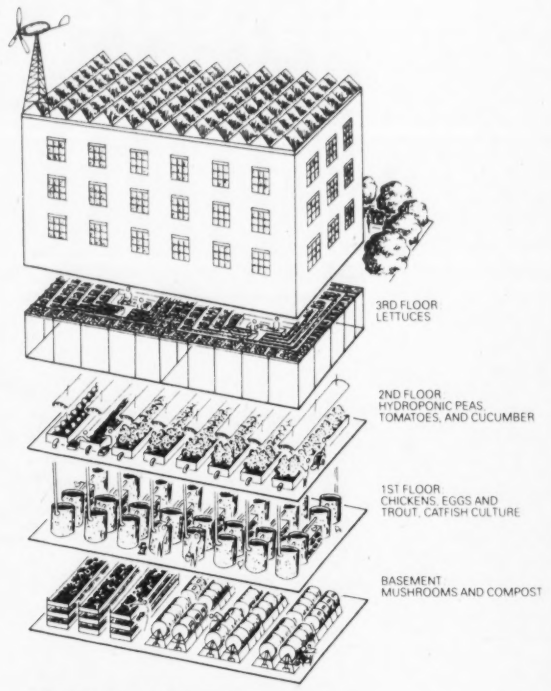
Bioshelters, Ocean Arks, City Farming

"If the discoveries of the New Alchemy Institute are so important, why aren't you rich?" a Famous Person once asked John Todd, cofounder of the Institute. Good question. The answer is that ideas not obviously mainstream take a while to be accepted, no matter how wonderful. Convincing demonstrations don't necessarily help either; note that there have been practical solar homes for decades, but no solar building boom until builders, buyers, bankers and educators had sufficient incentive. Recent work, imaginatively reported, got things started.

*The New Alchemy Institute's experiments (**NWEC** p. 177) in aquaculture, bioshelters, small-scale farming and innovative architecture have proven successful, but so far have not ignited a massive thrust towards an ecologically sound, sustainable economy. Perhaps this has been because citizens haven't been able to see how these concepts might apply to their lives. This book elucidates an exciting collection of ideas that are a natural extension of New Alchemy thought — things that are now possible. It's a positive, hopeful view of what we can, and probably must, do soon.* —*J. Baldwin*



Bioshelters, Ocean Arks, City Farming
(Ecology as the Basis of Design)
Nancy Jack Todd and John Todd
1984; 210 pp.
$13.45
postpaid from:
Sierra Club Books
1142 West Indian School Road
Phoenix, AZ 95013
or Whole Earth Access



Warehouse Farm Company, Inner City or Suburban

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There is a science to working with existing forms and structures. It is comprised of a peculiar mixture of theory, research, and practicality — a science of "found objects." It does not attempt to build from scratch, but takes what exists and works to transform it to something useful or relevant. The French anthropologist Claude Levi-Strauss has described it as bricolage. Practitioners are bricoleurs, which translates rather clumsily as "enlightened tinkerers with what is at hand." In an age of increasing scarcity, such a person is potentially a kind of hero, someone who can see with different eyes and utilize available resources. A lack or problem is not seen only as a burden, but an opportunity. A bricoleur can see what was, is, and can be as a splendid continuum — one that must come full circle. Whereas most developers destroy before rebuilding, restorationists rebuild to recapture former glories, and designers prefer a clean slate, the bricoleur works from the assumption that the true potential of a house, a block, a whole town, or any other existing area, has scarcely been tapped.

Producer Gas

This 112-page book covers — rapidly, lucidly, and thoroughly — the history, technology, and economics of producer gas. It is full of photos representing the hundreds of thousands of producer gas plants used during WWII. And it is suffused with extensive, high-quality citations to relevant literature — historical and contemporary.

Interestingly, a U.S. government-sponsored panel produced the book. The staff included a Briton, a German, and a Swede, who brought a fantastic amount of background and experience to the project, and made it international.

We should find the people responsible for it, congratulate them, and look forward to their future work!
—*Greg Shadduck*

Miami, Florida, 1981. A charge of 110 lb of wood in the generator of this wood-powered 8,000-lb Lincoln Continental limousine takes it 85 miles or so on flat Florida terrain. In 1981, under a contract from the Department of Energy, its owner toured many southern universities demonstrating producer gas technology, especially to engineering students.

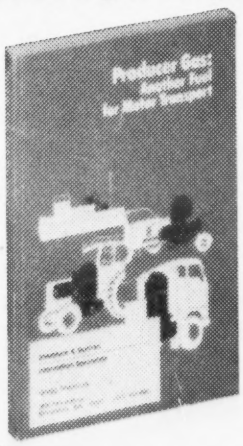
•

Producer gas requires no major modification of existing engines. To fuel existing spark-ignition engines with producer gas requires only a minor replacement of (or attachment to) the carburetion system. Producer gas requires no unconventional technology such as is required by electric, steam, or Stirling engine-powered motor transport. Given a set of instructions, a mechanic able to overhaul an internal combustion engine can probably install and operate a gasifier.

•

Producer gas will seldom be selected when gasoline or diesel fuel is available. The inconvenience to the user is too great. On the other hand, the political benefit of using it to reduce dependence on imported oil may in some cases outweigh pure cost considerations or user resistance. And when no liquid fuel is available, experience shows that people readily put up with the inconvenience of producer gas.

Producer Gas
(Another Fuel for Motor Transport)
1983; 104 pp.
free from:
National Research Council
BOSTID-JH217D
2101 Constitution Avenue N.W.
Washington, DC 20418



Olkkala, Finland, 1980. Wood-powered diesel tractor.

PUSH STICK

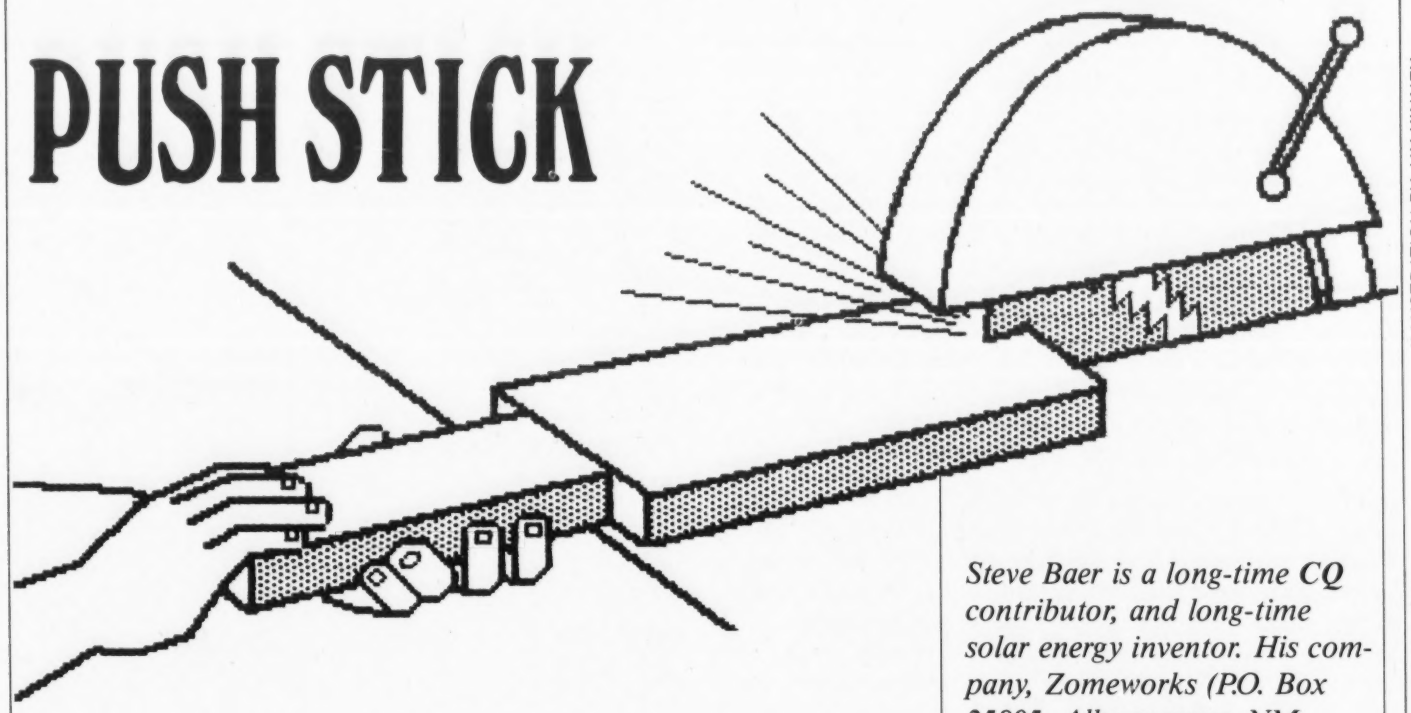


ILLUSTRATION BY JAY KINNEY

by Steve Baer

Steve Baer is a long-time CQ contributor, and long-time solar energy inventor. His company, Zomeworks (P.O. Box 25805, Albuquerque, NM 87125), consistently produces the most innovative passive solar control devices on the market. —Kevin Kelly

WHEN I MAKE A CLOSE CUT on a table saw, I use a stick to push the board through; better to have the push stick near the blade than your fingers. Sometimes it would be easiest to push the board through if I just kept shoving and ran the push stick into the saw blade, but I go to great lengths to avoid this. I don't want the blade to ever touch the stick that I am using for this job. Once, while I maneuvered the push stick so that it would miss the blade, I noticed that both the board I was cutting and the stick I was using to push were identical. One of them was being sliced by the saw blade and this brought satisfaction — the other one, a piece of scrap, of identical cross section, I was determined to never let touch the blade.

After considering this odd behavior, and the time I was wasting in this skittish dance with my precious piece of scrap wood, I decided to go ahead and just keep on shoving — let the blade have some of the push stick. This hurried things but wasn't entirely satisfactory, either. My sensible and grown-up behavior disturbed my peace of mind.

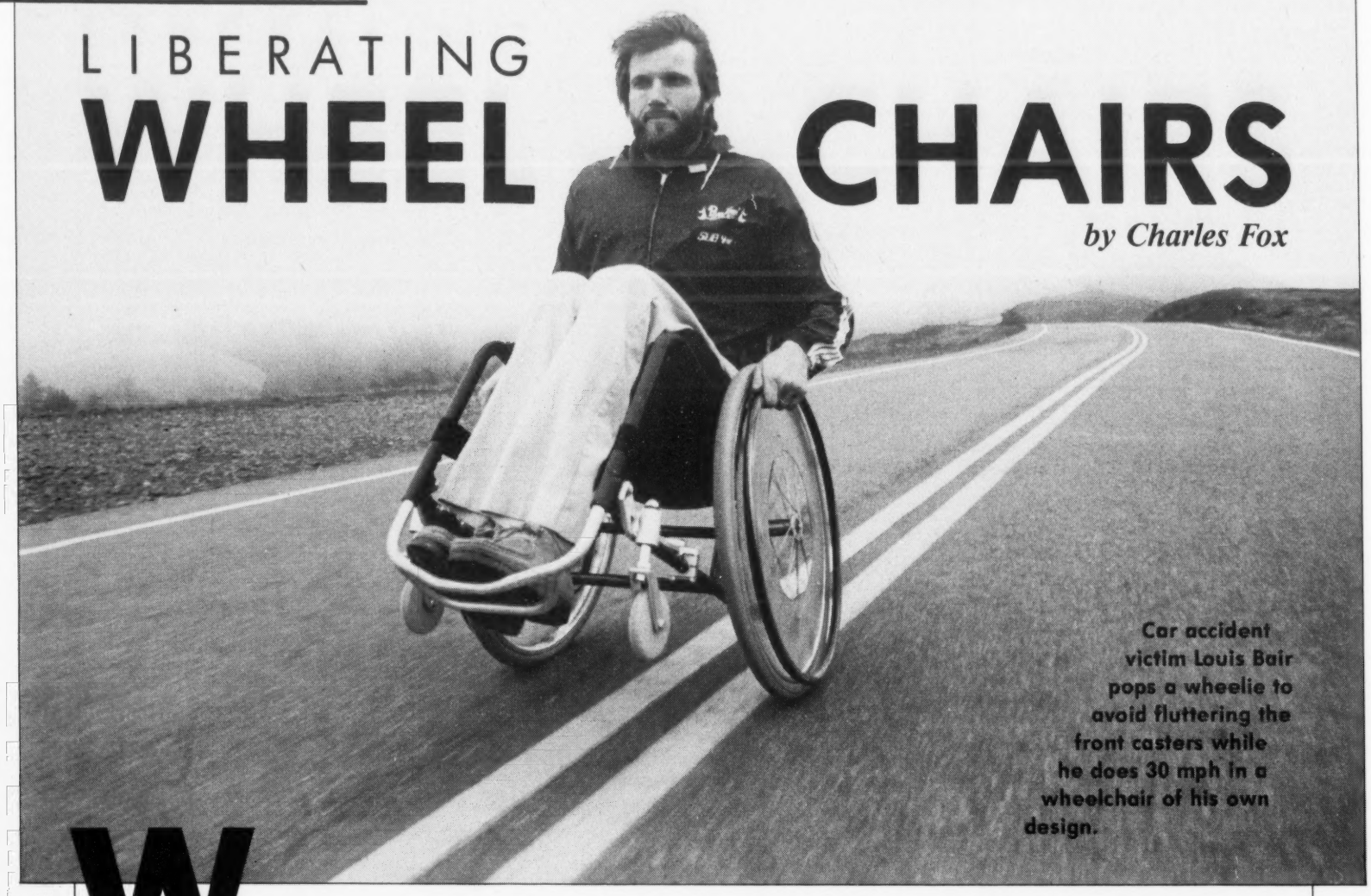
If you watch another person — particularly if he's working on your time — going through such an elaborate and wasteful ritual, you lose patience. He has gone to the trouble of getting the wood to protect his fingers and yet continues to waste time as if his fingers now extended through the scraps of wood. There is the whole question of our hopeless sympathy for the feelings of boards or pipes or concrete when they have no feelings. These concerns that are not based on reason accompany many activities with tools and equipment. Pipelines at tank farms in the oil fields are built to exacting tolerances that have nothing to do with the flow of gases and liquids inside of them. The welders, with their levels and tape measures, build to conduct oil and gas, but if you observed their behavior you would know they have an allegiance to the perfect machines that produce 4″ Schedule 40 black pipe and the casting and milling machines that make the flanges that bolt together. The pipe fitters act as ambassadors for the perfect machine-made parts that have been introduced to a remote site where they are to live next to uneven sagebrush and rocky gullies. When nature designs for the flow of liquids and gas, you get intestines and arteries; when the welders use steel pipe, you get a crystal of steel tubing.

★ ★ ★

It is only natural that men would come to believe that an enormous machine is preparing itself to control them. Men remain the same — fingernails no stronger, tongue still easily burned. The machines are growing, though. What other conclusion could someone come to? Is this what people mean when they refer to having to live in the real world: a world where machines play an ever greater role? The workers who slave over the crystal perfection of a network of pipelines believe they are ingratiating themselves to this unseen force. We are ready to extend sympathy to the push stick and help protect its wooden tip because we imagine a concerned master behind us — even though there is nothing there but sawdust. ■

LIBERATING WHEELCHAIRS

by Charles Fox



Car accident victim Louis Bair pops a wheelie to avoid fluttering the front casters while he does 30 mph in a wheelchair of his own design.

ALL PHOTOS BY ROBIN RIGGS

WHEELCHAIR riders call them "bikes." They're a new breed of hi-tech, lightweight wheelchairs built by the latest generation of riders.

I've been a rider for three years. I didn't choose my chair in the beginning. I just sat numbly in the hallway of the rehab hospital listening as the O.T. (Occupational Therapist) and the wheelchair salesman sized me up, the salesman checking off the options on his order form: "A heavy-duty model with the ratchet brake and the adjustable legs, wouldn't you say?"

The O.T. nodded. I wasn't really consulted. And fair enough. What did I know? Only that there was a sweetheart deal around here somewhere. A week later I rolled out of the place in a pressed-steel, fifty-five-pound Everest & Jennings (E&J) chair, wide as the Texas panhandle, with armrests and footrests like trusses on the Golden Gate Bridge.

I didn't question this chair.

I was a Stage 7 MS sufferer. Which means non-ambulatory but with the ability to transfer unaided. The first order of business was to "make the way," which is how you deal with the turbulence of loss. You make the way smooth again. Get back to doing things naturally. That means incorporating a wheelchair into the body image until it is used as unconsciously as a pencil. Doing this I came to understand Bronowski's admiration for the adaptability of man. The drawback to this adaptability is that it is indiscriminate. For it will just as rapidly incorporate a bad chair and the limitations it imposes. Given our basic dislike of change, a dislike sharpened by a recent plethora of it, I was reluctant to surrender the chair, once adapted to it.

Then my friends Dan and Ev Gurney sent me a book by a young French rider who had travelled the world. On the cover was a picture of him in his chair beside a dirt road in Africa, hitch-hiking. I looked at that picture for a month before I realized what was markedly different about the chair — no arms! I took the arms off mine and freedom flooded in. And then I met a Belfast boy, an exchange student at UCB, who had been shot in the back by the IRA. His chair had tiny swing-away footrests. I bought a pair and threw away my E&J's vast and cumbersome adjustables. There went another fifteen pounds of weight and I, too, felt leaner.

But I got no further until I froze the slides of my old E&J battleship by taking it into saltwater, so it no longer folded, then twice broke the frame welds, and wore out the bearings, and made the thing such an eyesore my family was ashamed of me. Now it was altogether essential to get a new chair.

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*In "Old Blue" (**CQ** Spring 1978) Charles Fox traced the sorry course of his '66 Impala as it was towed to the junk yard, fragmented, and shipped as recycled scrap to Taiwan, instead of more sensibly, to Pennsylvania. Contributing editor of* Car and Driver *and one-time racer (three Baja 1,000s and a couple of "tremendously good crashes"), Charles now writes blockbusting sagas. An expanded retelling of his pioneer wheelchair runoff will appear in* Car and Driver *later this year (*Car and Driver, *One Park Avenue, Eighth Floor, New York, NY 10016, $9.99/yr. [12 issues]).* — *Kevin Kelly*

National wheelchair-tennis champion Marilyn Hamilton zips along Ridgecrest Boulevard near San Francisco in a modified Quickie. Marilyn works with the "lighter than air community" that built the prize-winning human-powered airplanes, Gossamer Albatross and Condor.

My daughter miraculously put me in touch with the dean of riding engineers, Ralf Hotchkiss. Ralf dropped a bike when he was a freshman physics major at Oberlin twenty years ago. Fortunately for a great number of others (there are a million of us in the U.S.) he has been riding, designing, and building wheelchairs ever since. He is an independent design consultant to Appropriate Technology International, advising developing nations on how to build low-cost wheelchairs. He also consults for a variety of manufacturers in this country and Japan. He rides a chair of his own design, "The Mexican Cruiser," which is an all-terrain chair currently being built in Mexico and Nicaragua. In Berkeley, where Ralf lives, the material for this chair cost him $70. With the assistance of *Car and Driver,* we set up a test to evaluate five new wheelchairs.

We chose Dan Gurney's place to run the chairs because who else has a sense of humor, a big heart, a 50,000 square foot shop near the heart of L.A.?

For help we enlisted Brian Geier, a wheelchair athlete who coaches a basketball team in Los Angeles. Geier was hurt in a pickup truck accident, returning from a rock-climbing expedition in 1970. He was to be our "work" rider. We would speed each chair over pavement and gravel and up and down curbs (I am lousy at this). We would inspect, disassemble, adjust, and play with them for a couple of days. It was not to be a rigorous *Consumer Reports* affair. Our physical capacities were different, and the chairs were all set up for my measurements, which are a little longer than either Ralf's or Brian's. It reminded me rather of the way *Car and Driver* used to test cars: with a stop watch, country road, and the seat of the pants.

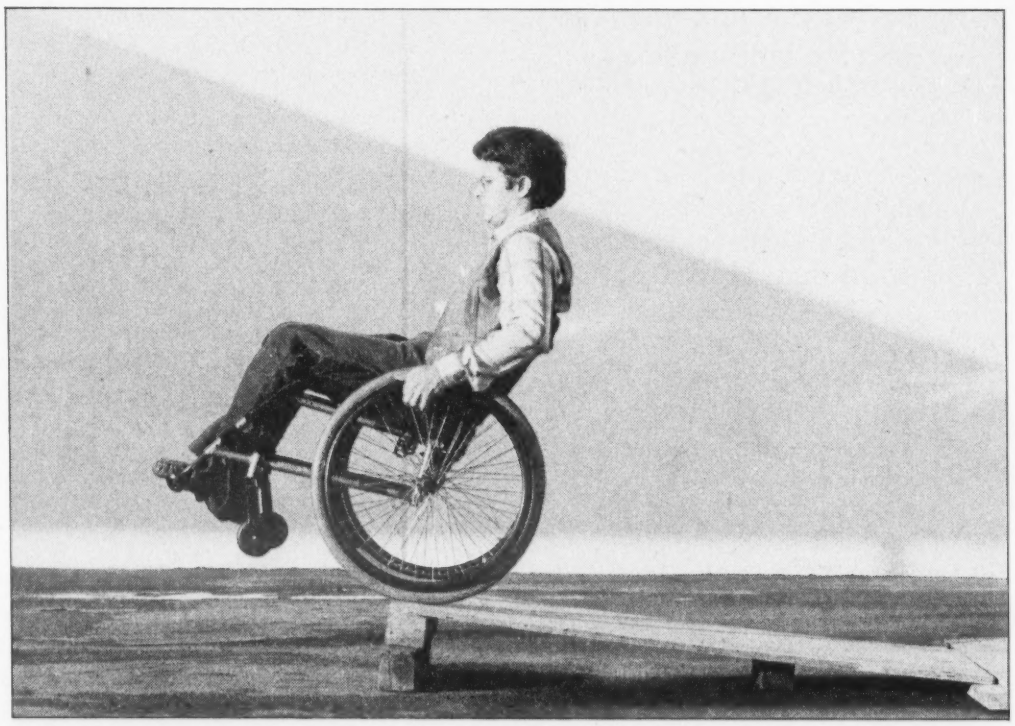
There are two basic lightweight styles, folding and non-folding. Folders may be convenient but it's tough to make a folding chassis rigid. They tend to flex and therefore not to handle well and, like convertible cars, to weigh more because wall thickness is used to compensate for structural weakness.

Ralf suggested six manufacturers. There are many more, but those six represent a broad cross section of the industry. Three of the best of the avant-garde builders of lightweights are Quadra, Inc., with their new folder; Motion Design, Inc., with their folding "Quickie;" and a third California builder, Louis Bair, who makes the non-folding Bair Chair in his Sacramento home. And three conservative manufacturers who are now moving to catch up.

After two days of riding, we agreed that these were the best:

QUICKIE 2

A 25-pound folding chair with two possible modifications, the perfect chair for me. It handles with the lightness and precision of a racing car and so comes closest to being no chair at all. Wheelbase, and thereby center of gravity, are easily adjustable. The shorter the wheel-



Ralf Hotchkiss, wheelchair user and designer, steadies before rolling off an 8" curb in an E&J Lightning chair. Some wheelchair jocks can handle a four foot drop as a stunt.

Steve Hamilton roars down Mt. Tamalpais at a breakneck 55 mph in a precision-built racing wheelchair. The small black inner ring on the wheels doubles as high gear push ring and as a literal hand brake. Some racing chairs employ bicycle cable brakes.

base, the further back over the axle the rider sits, the lighter the front end becomes, and the more maneuverable the chair is. You can also adjust the camber of the Quickie 2 (the more degrees of camber, the more quickly the chair will turn and the more stable it is), the width of the seat, and the height of the seatback. As Motion Design's Jim Okamoto said, ''It's our object to make the machine adapt to the rider.'' The Quickie 2 is a masterpiece.

We agreed that two features might be improved: the brakes, and the footrests, which flip up but don't swing away, and which have enough space between them to allow a foot to slip down. Clearly they should be made longer; Ralf also wondered if they were sturdy enough. As a ''high Para'' (paralyzed from the upper thoracic region down), he had trouble reaching the low brakes, tucked under the seat (high brakes are available, although they tend to inhibit the push or damage the thumb). Phil Remington, a race-car designer looking over our shoulders, was critical of the brakes, saying that instead of the lever arrangement used, they should go to a much simpler roller and cam, operated by a pull handle.

Motion Design was founded three years ago by three friends — Jim Okamoto, Don Helman, and Marilyn Hamilton. The three were hang-glider pilots until Hamilton crashed and put herself in a chair. The two men built one for her. Hamilton has become a prominent wheelchair athlete, and demand has grown for copies of her chair. Today, Motion Design employs twenty-five people and builds chairs in a 17,000-square-foot plant near Bakersfield. Every major manufacturer has tried to buy the company. Hamilton says they're not tempted to sell. ''Lightweights,'' she points out, ''are still primarily marketed to sports people. It's amazing how little-known they still are. Initially we met resistance in some rehab hospitals and worked with O.T.s to develop brakes, armrests, and adaptations to suit them. Finally, last month, E&J came out with the 'Lightning,' but we've already got our folding model out. So you can see how far ahead we are.''

BAIR CHAIR

The last word in elegant simplicity. The shortest, lightest, nimblest, non-folding chair. Louis Bair built this one for himself in basic black, and he'll build one for you in the color of your choice, out of steel, chrome moly, or aluminum, measured to fit you like a Saville Row suit. The back and foot cradles adjust at the push of a button. Push another and the wheels pop off. Bair's an athlete, and you can tell it from his chair. It's a Ferrari among Porsches. All these chairs ''push'' easily, but the Bair is sensationally easy. It's definitely a work of art. So precise is the balance, it holds a wheelie with ease and turns on a dime.

When Bair was hurt in an auto accident he built himself a racing chair. ''People started,'' he explained, ''by making standard chairs faster. But to really make a chair fast, you have to change the design configuration entirely.'' Bair then built himself an everyday chair, and now has built about a hundred. His reputation is spreading. He buys a few Quickie parts and subcontracts the frames to a friend of his who builds sprint cars.

Bair's chair was the lightest (twenty-two pounds) lightweight I rode. To start with, it felt like riding an egg. After an hour it felt as if I had cast off my ''bovver'' boots and put on moccasins.

QUICKIE

Ralf describes this chair as ''another winner. An excellent compromise between adjustability and simplicity; well-engineered and tough throughout. Jim Okamoto is clearly a great wheelchair inventor, whose work is more structurally rigorous than most.''

The Quickie is non-folding, but breaks down to about the size of a backpack since the wheels, as they do on all these chairs, pop off. The wheel is held to the ''quick-release axle'' by a detent bolt and is detached by simply pressing a button in the center of the hub. You then fold the seatback down.

It's the most solid-handling chair. It inspires a lot of confidence. You can play sports in it or cruise. You can adjust the footrest length (the double-bar foot cradle on the chair we had was fitted with an anti-dive nose roller), and you can adjust the height and recline of the backrest. You can adjust the center of gravity three

inches, and the front castor forks are also adjustable, so they can be kept perpendicular to the ground no matter how you alter the seat height. This keeps down castor flutter, which sets in on most chairs at fast walking speed. The Quickie weighs a few pounds less than its folding sister. It's three years old and still generally considered the ''state-of-the-art'' chair.

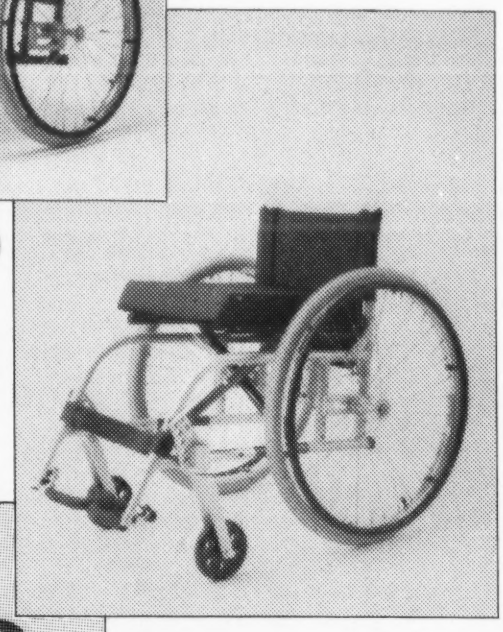
I want to insert a note of caution: these chairs are easily adjustable, but they must be adjusted right. Correctly tuned, they are then infinitely superior to the old chairs. Wrongly adjusted, they are worse. Rehab people and users be aware.

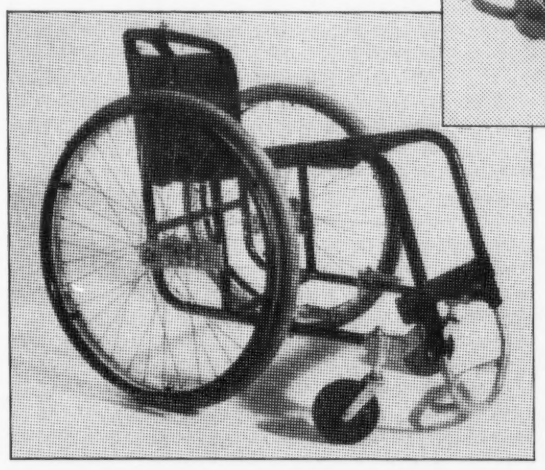
On the back of your Wheaties box next summer you'll be looking at wheelchair-racer George Murray, first to finish the Boston Marathon back in 1978. The foremost of today's wheelchair athletes is Jim Knaub, an Olympic-class pole vaulter from Long Beach before he was hit on a motorcycle. This year, after winning the Paris Marathon, he finished Boston in 1 hour, 47 minutes, twenty minutes ahead of the first runner. Running and riding have absolutely no basis for comparison, but the point is, it's racers who first started building lightweights. You couldn't ask for a clearer demonstration of how racing improves the breed, whether it's Toyotas or Quickies. ■

Quickie
$1299

Quickie 2 (folding frame)
$1405

from:
Motion Designs
1075 Cole
Clovis, CA 93612





Bair Chair
steel, 27 lbs., **$900**
aluminum, 21 lbs., **$1075**
chrome moly, 23 lbs., **$1175**

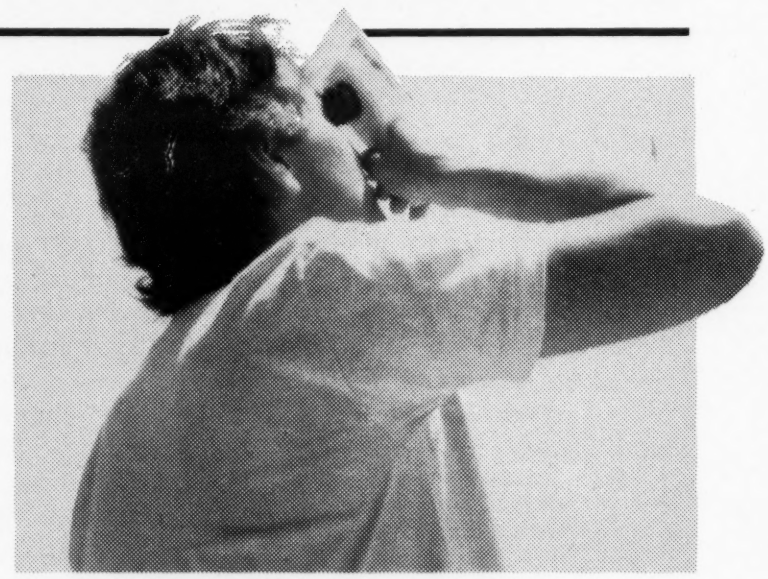
from:
Bair Enterprises
6 Seco Court
Sacramento, CA 95823

Pocket Survival

This outfit offers certain field-useful books and maps in fiche form. The maps are most interesting: would you have use for all 10,000 U.S. Geological Survey maps of Alaska stowed in your glove compartment? They have index maps available too, so you don't need to buy all of 'em, just choose the ones you want. Prices are ridiculously less than ''real'' maps. A field fiche reader makes it all practical. I can see real advantage in this system, particularly as this company brings out their world nautical charts. Anyone who has wrestled big charts in a sailboat or aircraft cabin will love Micro Maps. All in all, a good idea for us map-users. —J. Baldwin

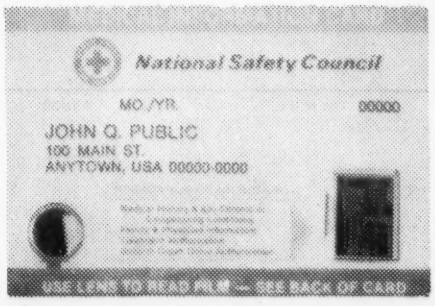
Their portable micro-fiche readers for under $20 would be of use to anyone — merchants, architects, publishers, etc. — who would have occasional need to read a fiche but no need of a $300 desk-top machine.

—Kevin Kelly

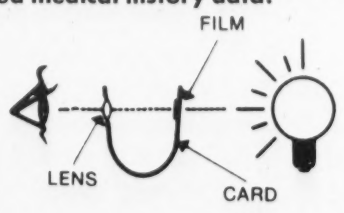


FX15 Field Reader in use

Pocket Survival
catalog
$2.00
from:
Pocket Survival
P.O. Box 2010
Dallas, TX 75221



A complete, detailed medical record on microfiche, with a built-in reader, is easy to read and potentially a lifesaver. This wallet-sized medical card can be read by first aid or medical personnel who may need medical history data.



Europe Through the Back Door

Welcome to Travelology 101 — a short course on surviving in Europe. Our teacher approaches traveling as a skill. With great warmth and wit he shows us how to avoid lines, ask for a cheap room without losing dignity, and order what you want in Turkey.

Class over, the author calls up his 14 years of Europe-roaming and introduces us through the back door to his favorite neighborhoods. He throws in a ten-week, cleverly devised whirlwind tour for the fanatical. (You'll still need a where-to-eat-and-sleep guidebook to go with it.) This is the best handbook to the continent since ***Vagabonding in Europe****, over a decade ago.* —*Kevin Kelly*

Europe Through the Back Door
Rick Steves
1984; 371 pp.
$10.45
postpaid from:
John Muir Publications
P.O. Box 613
Santa Fe, NM 87504
or Whole Earth Access

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Sometimes you'll be met by hotel runners as you step off the bus or train. My gut reaction is to steer clear, but these people are usually just hard-working entrepreneurs who lack the location or write-up in a popular guidebook that can make life easy for a small hotel owner. If the guy seems OK and you like what he promises, follow him to his hotel. You are obliged only to inspect the hotel. If it's good, take it. If it's not, leave — you're probably near other budget hotels anyway.

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Be melodramatic, exaggerate the accent of the language you're working with. In France, if you sound like Maurice Chevalier you're much more likely to be understood. The locals won't be insulted — they'll be impressed. Even English, spoken with a sexy French accent, will make more sense to the French ear. In Italy, be melodic, exuberant, and wave those hands.

• Insults

English	German	French	Italian	Spanish
Hairy creep	Oller Leistreter *(Oller lysetrayter)*	Troglodyte *(Troglodeet)*	Stupido scimmione *(Stoo-peedoh scheemeeohneh)*	Espantapajaros *(Spantahpahharos)*
Get lost	Hau'ab *(Hao aap)*	Allez vous fair voir! *(Allay voo fair vwar!)*	Va all'inferno *(Vah ahll'in-ferno)*	A ver si te pierdes de vista! *(A ber see te peeyerdes de beestah!)*
May I have another plate for the maggots?	Bringen Sie mir doch noch bitte einen Teller fur die Maden *(Breengn zee meer doch noch bitte y-nen tayller fure dee maaden)*	Donnez-moi donc une cuvette pour y mettre les vers! *(Donnay mwar donk in kivette poor ee mettr'er lay vair!)*	Mi darebbe un piatto a parte per i vermi? *(Mee darehbbeh oon pee-aht-to ah parteh per ee vehr-mee?)*	Tiene otro plato para dejar los gusanos? *(Teeyene otroh plato para dehhar los goosanos?)*

U.S. and World Wide Travel Accommodations Guide

Most accommodations listed are in universities or Y's. Some are restricted to students or educators, but many are open to the general public.

The scope of this booklet's coverage distinguishes it from other budget guides. Besides extensive coverage of North America and the British Isles, there are listings for over two dozen other countries in all parts of the world. —*Walt Noiseux*

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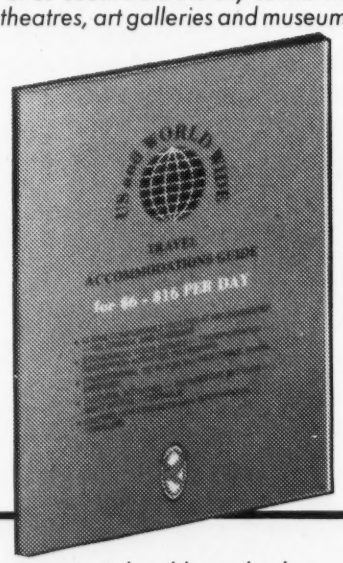
32 *LOUGHBOROUGH* University of Technology Loughborough. The Conference Secretary, BOX C81/ULO, Univ. of Technology, Loughborough, Leicestershire, LE11 3TU, England Ph: (0509) 63171

Charmwood Forest and such ancient towns as Ashby de la Zouch, Coalville and Belper, birthplaces of the Industrial Revolution, and to the North the magnificence of Belvoir Castle.

33 *MANCHESTER* University of Manchester. Assistant Bursar, Box C81/UM, Univ. of Manchester, Oxford Road, Manchester, M13 9PL, England. Ph: (061) 273 3333 Ext. 3211

The main campus is only a mile or so South from the city centre with its good restaurants and shops, theatres, art galleries and museums.

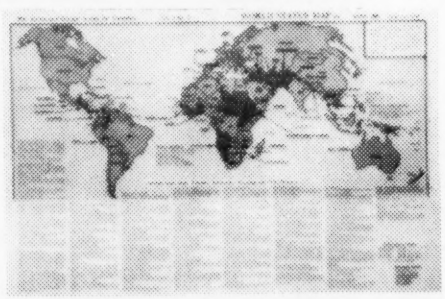
U.S. and World Wide Travel Accommodations Guide
(For $6-$16 Per Day)
1984; 61 pp.
$7.95
postpaid from:
Campus Travel Service
1303 E. Balboa Boulevard
Newport Beach,
CA 92661



World Status Map

It's always been unwise (though often possible) for international travelers to ignore political and economic difficulties in countries they visit; nowadays, increasingly volatile situations suggest that a little extra pretrip research may be in order. The ***World Status Map*** *uses information from the State Department, World Health Organization, the National Center for Disease Control, and news services to produce a monthly report of travel advisories, warnings, war zones and danger areas for travelers. Included along with a war-zone map is updated information on passport, visa, health and other requirements around the world, which has never before been available from a single source.* —*Steve Cohen*

World Status Map
$36/year (12 maps)
from:
EM Electronics Co.
Box 2533
Fairfax, VA 22031



Breakfast at Cape Lookout State Park

Bicycling the Pacific Coast

Between Mexico and Canada is a 2,000-mile-long, marked bicycle route with a designated camping place for bikers within each day's ride (usually for a dollar or less). The route parallels the Pacific coast so it's hard to get lost. What this guide is good for is a description of what you see, and for planning your ride, so you can rest before the big hills and make it to town before the grocery store closes. It has clear maps and a mile-by-mile log. The most common mistake (I was guilty too) is to ride north, against the ceaseless north winds, instead of sailing down with them. —*Kevin Kelly*

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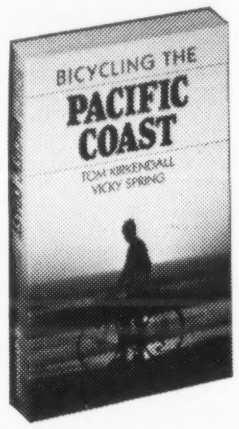
A hiker-biker campsite is a special space in a campground set aside for people traveling alone or in small groups using nonmotorized forms of transportation. Maximum stay is two nights unless otherwise noted. . . .

Bicycling the Pacific Coast
Tom Kirkendall
and Vicky Spring
1984; 224 pp.
$8.95
postpaid from:
The Mountaineers
715 Pike Street
Seattle, WA 98101
or Whole Earth Access



The hiker-biker system of campsites is well organized in Oregon and California. In these two states, there is virtually no need to worry about full campgrounds and not finding a place to stay even on busy summer weekends. The fee per person per night is very moderate, and there is room for a large number of cyclists. In Oregon and California, hiker-biker sites may be found in state parks, some Forest Service campgrounds, and a few county parks.

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A logging truck driver made the following suggestions: Do not ride in the center of the lane; ride as far to the right as possible, preferably on or to the right of the white line. When traveling in a group, do not string out in a long line down the road; break into groups of two or three, and keep at least a quarter mile between these groups to allow trucks to swing out around riders then get back in. When the driver tries to pass a long group, he may be forced to swing in close if he meets oncoming traffic.

The Car Buyer's Art

Would you be willing to work hard as an actor for $500 an hour? That's about what you'll "make," tax free, if you follow the advice given here the next time you buy a car or other high-ticket item. This is definitely not just another boring How-To-Buy-A-Car effort. It is no less than a military manual on assault of a dealership. The instructions are very explicit, right down to a minute-by-minute script in some cases. When we bought a car last year, we used most of the strategies given here and took it for about $2000 less than anyone else we know, so we can vouch that the suggestions work. It's rare to see insider's information available in so useful a form and I recommend this book highly. It even has an exam at the back (with answers) so you can practice. —*J. Baldwin*

The Car Buyer's Art
(How to Beat
the Salesman at
His Own Game)
Darrell Parish and
Raymond DiZazzo
1981; 114 pp.
$5.95
postpaid from:
Book Express
P.O. Box 1249
Bellflower, CA 90706
or Whole Earth Access

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As was previously mentioned, turnover in the car selling profession is high. Because of this, a young salesman is very likely to be a *new* salesman, which is exactly what you want. Here's why. Being new in the business, he will lack the hardened "take 'em to the cleaners at all cost" attitude of the more experienced veteran. Along the same lines, his persuasive skills will probably not be fully developed. And finally, remember, he is keenly aware that in order to remain employed he must sell cars. In order to accomplish this and gain an initial foothold in the profession, there's a good chance he'll work his heart out for you and settle for a sale "on the books" even if the commission is small.

•

Do not commit yourself to dealership financing, but act out the entire bargaining process inferring strongly that those are your plans. Then, if the dealership can't beat your best lender's offer, become a cash buyer at the end of the deal.

Remember, if the dealership feels you will finance through them, it means more money in their pocket, since they will attempt to charge you a higher interest rate than they originally paid on the money. And, remember these dollars, too, are considered profit by the sales force. Here's how this kind of thinking affects the bargaining process. If I as a salesman feel you will borrow money through me at an inflated interest rate, but at the same time you turn out to be a hard bargainer, I will be inclined to give in on some other aspect of the deal if I have to, and simply take the profit from you in an area you are unaware of. Thus, by playing out the bargaining process in this way you place another bargaining advantage in your favor. When you become a cash buyer in the end, though, that portion of the dealership's profit is placed right back in your wallet!

•

ARTISTIC "AD BUYER"

A buyer who, having gathered soft and hard intelligence, arranges for outside financing in advance, then watches the car ads in local newspapers for what he or she *knows* to be wholesale (zero profit) deals. Then, when the type of car they are in the market for is advertised, they rush to the lot when it opens its doors and demand *that* car for the *advertised* price, in an across the board cash deal. Remember, the intent of the wholesale ad cars is simply to get the buyer *onto* the lot so a salesman can then steer him toward more profitable deals. If the buyer sticks to his guns, however, the dealership, by law, *must* sell the car for the advertised price. Most ad cars, incidentally, are made available on Friday mornings—so be ready!

Packin' In

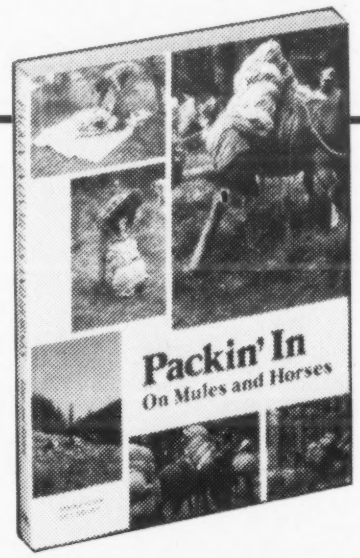
A long-time packer and his enthusiastic protege have put together this friendly, relaxed book. It covers the obvious questions: selecting animals and equipment, packing everything from an elk carcass to a piano (yes!), and leading a string. They also fill you in on the things you might not think of — such as transporting stock to the trailhead — and good manners. They assume you know how to ride and handle horses but offer plenty of tips on camping. The book is strong on safety for animals and people, a good back-country ethic, and just plain fun. Great photos show everything in detail, and will give you an itch to hit the trail. —Susan Nolan

•

We suggest you select a steady, slower animal to go first, one with a walking pace that the entire string will find comfortable and who won't be always running up on your saddle horse or trying to pass him.

Put your quicker, more agile animals toward the end of the string where their greater athletic ability will help them negotiate obstacles. Progressively taller animals toward the end of a string make it easier for you to see how the lads back there are riding. A problem animal, like a puller who knows how to break pigtails or a round-backed mule whose saddle often slips, should go second. There you can keep an eye on him and let him know from time to time that his behavior is being scrutinized.

Packin'In
(On Mules
and Horses)
Smoke Elser
and Bill Brown
1980; 158 pp.
$9.95
postpaid from:
Mountain Press
Publishing Company
P.O. Box 2399
Missoula, MT 59806
or Whole Earth Access



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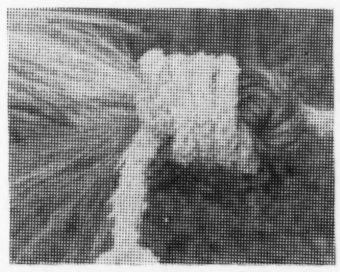
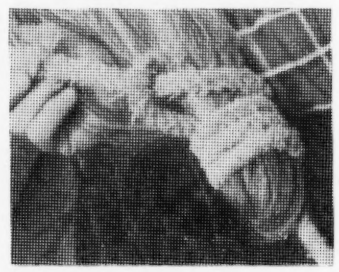
While you're thinking about range for your stock, give some thought to wildlife. Livestock grazing can be detrimental to deer and elk if it removes feed they would otherwise use in winter. You should avoid open south-facing slopes of grass and shrubs at low elevations. In late summer, the grass on north and east slopes will be better, and yet worthless to wildlife in winter.

Knot used for tailing pack stock. This is something you may never have to do, but it's a good thing to know.



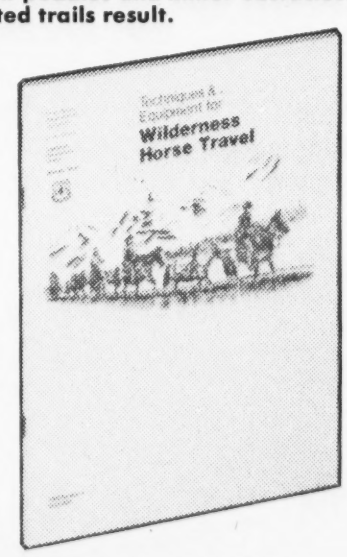


Techniques and Equipment for Wilderness Horse Travel

Although it is too sketchy to be a beginner's only guide, ***Techniques and Equipment for Wilderness Horse Travel*** *is useful for its detailed plans for homemade gear (nose bag, picket-pin, etc.). It's also very strong on low-impact camping tips for the horse camp. The booklet is adapted from a 13-minute color-and-sound film of the same name. Both explain the use of "go light" backpacking gear for the traditional "everything-but-the-kitchen-sink" horse packer. Important ideas here.* —Susan Nolan

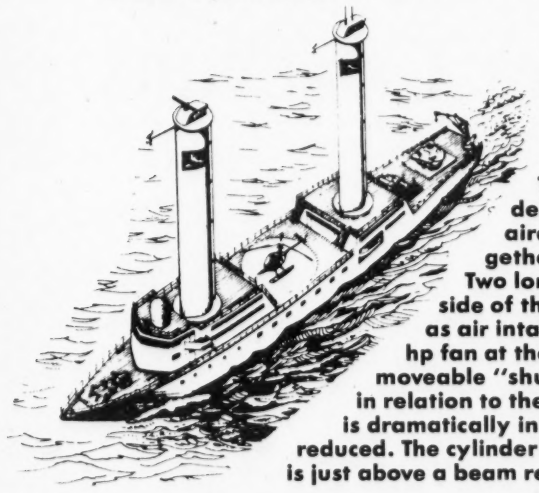
Once on the trail, care is taken to keep all stock single file. Multiple trails are prevented when stock are kept on one trail. Extra care is taken on open ridges and mountain meadows. Riders watch trail conditions and hold their horses from skirting shallow puddles and minor obstacles. Otherwise, wide deteriorated trails result.

Techniques and Equipment for Wilderness Horse Travel
USDA Forest Service
1981; 42 pp.
Booklet and film rental
free from:
Missoula Equipment
Development Center
Building One,
Fort Missoula
Missoula, MT 59801



Sail Assistance News

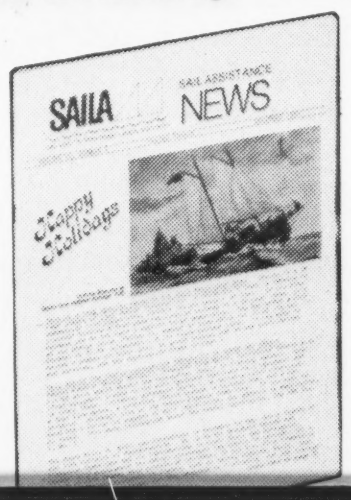
High fuel prices have encouraged a renewed interest in the use of sails on commercial vessels. There's an organization intended to bring folks interested in this together: Sail Assist International Liaison Associates. This is their newsletter. It's one way to keep up on what's happening. The issue I'm looking at has a special 24-page insert (in a four-page newsletter) describing and illustrating a number of recent designs either ailing or proposed. It's available separately, but a subscription is not — you have to join the club. —J. Baldwin



Artist's conception: CALYPSO II. The aspirated cylinder has the shape of two aircraft wings joined together, elliptical in section. Two long vents, one on each side of the leading edge, serve as air intakes, assisted by a 12-hp fan at the cylinder's top. A moveable "shutter flap" is oriented in relation to the wind direction; lift is dramatically increased and drag is reduced. The cylinder's best "point of sail" is just above a beam reach.

The design team of Prof. Lucien Malavard, Capt. Cousteau, and Bertrand Charrier expected the efficiency to be about five times that of a conventional sail with similar area, but discovered the factor was closer to six. Cousteau estimates that an average freighter equipped with his aspirated cylinder rig could expect about 35% fuel savings.

Sail Assistance News
Special Design Issue
(Volume II, Number 4)
Membership in SAILA
$25/year (4 issues)
from:
SAILA
1553 Bayville Street
Norfolk, VA 23503



COURTESY OF ECOTHEATER

EcoTheater company at its largest (1980) in costume for John Henry. *This stage is basically a hay wagon with a 16-foot flatbed which we hauled behind a van or jeep, with all the scenery, banners, boxes, and steps loaded down and tied on top.*

INDIGENOUS T·H·E·A·T·E·R

PLAYS • WITHOUT • ACTORS

by Maryat Lee

IF ASKED TO DEFINE EcoTheater, I start by saying that *eco* comes from the Greek word meaning "home," and *theater,* of course, from the Greek word meaning "a place for seeing." Seeing, as distinguished from looking, is an ability to imaginatively lift the surface appearance, the faculty we call on when the invisible becomes visible. EcoTheater is a place for *seeing,* in this sense, ourselves and our home. It is both a mirror and a window, and sometimes a door.

It could be said that I "wright" the plays about this place in southern West Virginia, and I work with untrained local actors when I can persuade them to act. This has been one of the hardest struggles, very time-consuming and frustrating, because the words "acting" and "actor" have a definitely negative association with pretension for most people outside the theater. But it has been worth the effort of redefining acting, or proving that I want something different from what they think is required. I just want them simply, and not so simply, to be themselves. Almost without exception over the years, I have had no disappointments. When untrained actors here have consented, there is a beautiful unspoiled quality of truth and an authority that nourishes me and makes it all worthwhile.

Maryat Lee, presently rooted in a little holler nine miles east of Hinton, West Virginia, has a shy, quiet voice that is being listened to by mountain folk and New Yorkers. That tells me it's true.
— Kevin Kelly

Theater texts say, "If an actor is to be other than merely himself . . ." But being yourself is no mere thing. The goal here is for an actor not merely to lay aside the roles we all play in life, but to lay aside years of accumulated detritus and bad self images and be there, exposed in all his or her power and fragility. For us theater is an occasion, if you will, for the actor to be truly seen, as we are rarely seen in this life. And when it happens, it is impossible not to celebrate, because the experience of *being* in a disciplined framework of theater is a mighty one for both subject and spectator. I know that this raises all kinds of thorny questions that, thank goodness, it is not my vocation to give more than a passing nod to. As long as it works for me that's enough. I know that this experience seems to happen to a few of the very great actors who seem to transcend all kinds of barriers. But it can also happen to plain people, when they take the risk.

EcoTheater's approach to acting does not mean the actors play the same "being" in each play. In this regard, theater persons should read *The Minds of Billy Milligan* as recounted by Dan Keyes.* The capacity of one body to be so many people with such different aims, habits, accents, is awesome. The account raised a constant question for prison and hospital authorities: Is he for real — or is he just a great actor? As he recovered, Billy described in vivid detail what happened as one or another of his personalities dealt with the demands of life. He described it unselfconsciously in theatrical terms as a "spot" that was taken over by a successsion of people.

Sometimes there were mix-ups, and characters were quarreling about who had the spot and who was permanently banned from the spot because of troubles. But there was a core person, Billy, who "went to sleep" under the stress of trauma (sexual abuse by his step-father), and, indeed, he wakes up as he gets help and begins to claim the personalities one by one — a slow, laborious process to be sure. The core personality seems capable of doing all the things that the dazzling "almost real" personalities did, but with a genuineness and

Lucinda Ayres in one of her scenes from The Hinton Play. *Lucinda came in 1977 and asked why we stopped doing EcoTheater. We quit after 1975 because it practically broke me. She nudged, she volunteered to help if we began it again. She started in walk-on parts, and helped in the office.*

FRAN BELIN

**The Minds of Billy Milligan*, by Daniel Keyes (New York: Random House, 1981; paperback edition: New York: Bantam Books, 1982). True story of a man whose psyche splintered into 24 separate personalities.

FRAN BELIN

1984. In The Hinton Play *Kathy Jackson does a scene that we call "I Done Wrong," which is about why it is almost impossible for anyone ever to apologize. "Oh, they talk about forgiveness, but no one ever does it here except to say, 'I'm sorry' for nothin' at all, and that's just manners . . ."*

honesty and even awkwardness without which, as Billy began to perceive, there is only a hollow empty simulacrum of the real thing.

We all have a core personality, normally, and in gifted people it can express itself in innumerable guises in everyday life. People don't have a need to act on stage; they are acting all the time. But there is a core personality, and it is seen sometimes through guises and at special moments, face to face. We are in danger when we are out of contact with it altogether. It is there when a great musician like Casals plays or a great actor acts. It inspires, mystifies, and humbles the observer. The trouble is that it doesn't happen as often as it could.

I have pondered this question and feel that untrained actors offer many clues. The non-actor typically has no need to act. If anything, non-actors have a need not to act, a need to be seen for what they really are, in the safety, perhaps, of another name and place. It so often happens on a trip, when we unveil to a stranger our secrets that our best friends don't know.

This is, then, part of the argument for getting non-actors on stage. In casting our plays, the person's ability to find in themselves the character of the play is the important thing; whether they are male or female is quite unimportant, usually. This gives us, right off, twice the choice. John Henry was played by a female for five years and by a male for one year. None of our audiences had problems with it except Ed Cabbell, of the John Henry Foundation. Ole Miz Dacey has been played by both a man and a woman. Then, the parts are tailored further to make them as comfortable as a good suit of clothes, until the actor feels that it is him/herself. As a new actor replaces an old one, of course, further alterations are necessary. Strictly speaking, one could say that it is not acting — or writing, either.

From the moment I started to try to find what I needed on a stage (1951 on the streets of East Harlem), I suspected and then learned that the presence of even one theater-trained person in my company could seriously compromise the results I wanted. After working in the neighborhood for about a year, after the people and the subject matter and the idea of a play about narcotics had jelled, I had all the actors except for one large role in *Dope!* I should have been patient enough to work a local person into the role of the addict. Instead I held auditions and posted cards in a few theater schools. Neil McKenzie from the Piscator Workshop got the role and was the only actor out of a cast of 10 non-actors. I nearly lost the rest of the company during the next two weeks because of his unintentional, subtle influence on them and me — even though I explained to him that he was to fit in with them, not otherwise. The realization that I was losing the company resulted in a resuscitation of the company, at the price, I'm sorry to say, of his acute discomfort. Neil told me years later that it was the end of his acting career. The play, produced by the East Harlem Protestant Parish, was the first publicity piece of any kind on narcotics, as well as the first modern street play, and it was, as Neil perceived, the non-actors and the streets that directly accounted for its success.

Since then I've tried to mix actors and non-actors, and it is almost always more trouble than it's worth. (One exception to the rule was Estelle Parsons, who visited EcoTheater and, in one of the actors' absence, took over a role. It was that evening in 1979 that gave me the idea that the company was ready to have outside interns. She pushed, and they pushed back. There were, in these circumstances, no jarring differences. Had she started rehearsals with them when they were working things out, the story might have been quite different.) I keep trying because very simply it is nice to work with people who are motivated to work at the very beginning. The fact is that my own exposure to theater, though not at all extensive, was quite enough to watch out for, lest I impose ideas of forms prematurely rather than identify and cultivate what was inherent in the local culture. In this sense, anthropology has been a good, though not infallible, reference point.

I began writing a book on this kind of theater — indigenous theater is the closest word to describe it, I suppose. To test whether what worked so well in the New York streets would work in a rural place, I moved back South, choosing West Virginia. It took four years with Appalachian neighbors before I even broached the idea of theater. All that time, I was listening to the wonderful narrative, the living, changing oral tradition, realizing it is a very short step between narrative and drama, but wondering why

the step toward drama had not yet taken place. In 1975 I wangled 12 youths from the summer youth program for low-income kids. Fran Belin, a piano teacher, and I put them into a crash program. We produced two plays in six weeks. These kids were not selected. We got whomever they sent up the road. They helped research the plays, had classes, made flats, and acted. After three more years we took on interns who had some exposure to college and/or theater. These few were screened carefully, supervised, and forewarned:

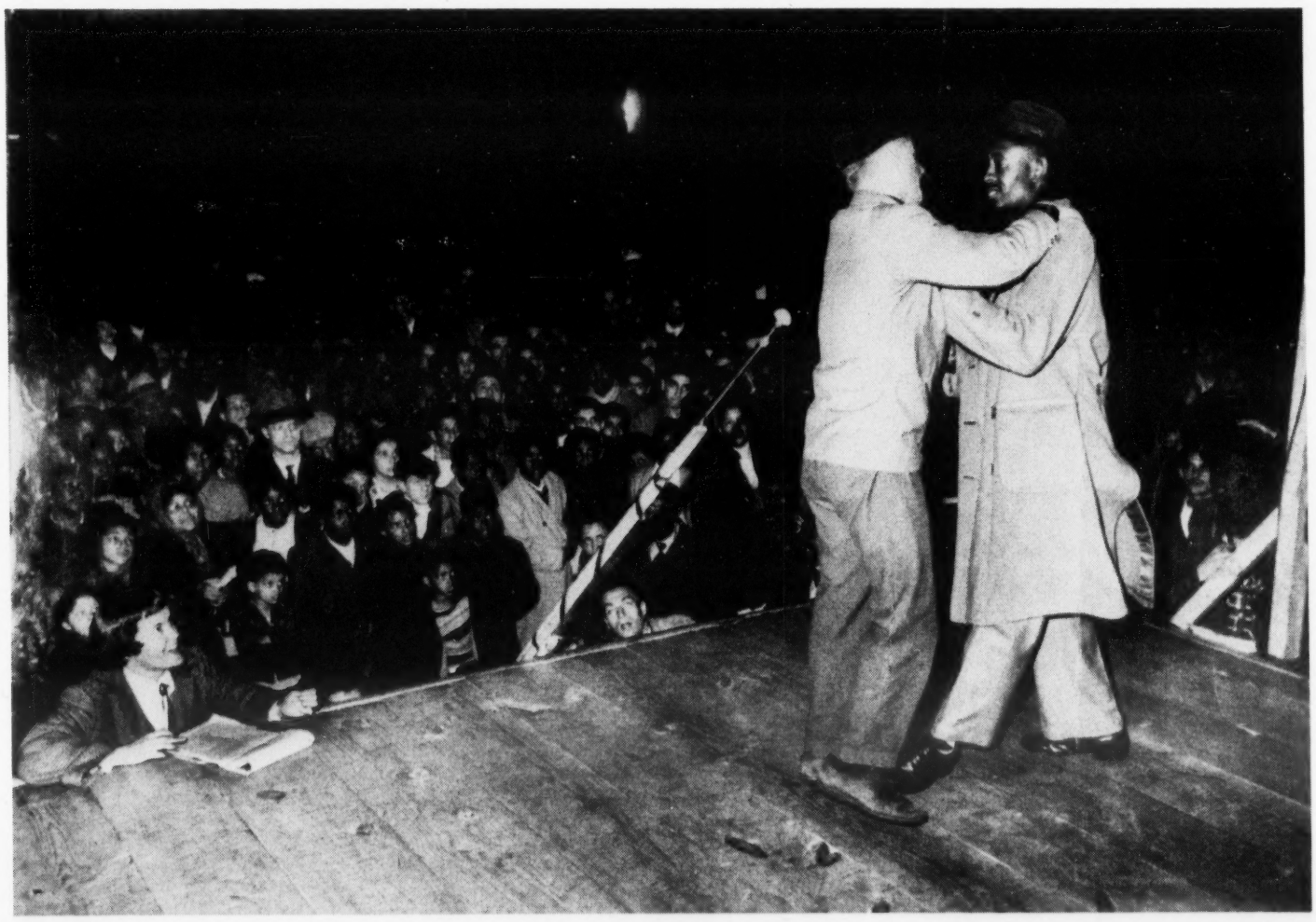
> People who work in EcoTheater must accept the rural conditions and be prepared to make certain sacrifices: we do not have television, nor are we near any cities or nightlife; outhouses, wells, and primitive but clean living are part of the life. We try to behave with consideration for the older neighbors in the holler who are rich in experience and lore. Drugs and drinking are not acceptable here, nor are extremes in dress and appearance. Language is still a volatile and loaded communication here. This is the Bible Belt and people still respect God and we respect that respect. Much like anthropologists, we are not isolated from, but part of, this community. The mountains have long been a barrier to mainstream America and in many ways this is healthy. We try to make sure that bringing in a few "outsiders" will not jar the fragile ecocultural balance.
>
> EcoTheater comes out of its home environment and respects it, makes comments on it, and gives the community a voice. It is not bussed into the boondocks. It is not a theater that trickles down from the cultural centers, but one that comes from the bottom up — theater very like what it probably started out to be in simpler times.
>
> It is not easy to give up one's habits and assumptions. Although style evolves slowly out of our company and is not imposed upon it, this does not mean there is little structure. Discipline is very important as to schedules, classes, duties, performances, being on time, caring for tools, etc.

The first season, 1980, with five interns, was valuable both to the company and the interns, but it was a strain. Local people rarely have any difficulty with overacting. Once liberated from the script, they have authority that grows and grows. The key to the

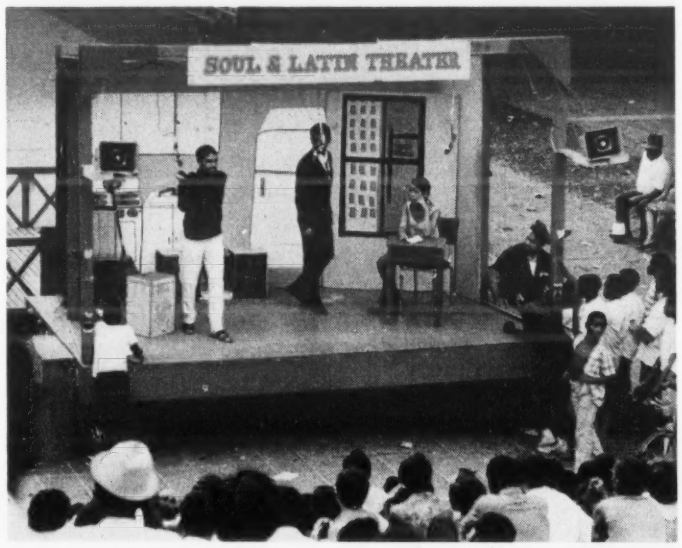
A vacant lot in East Harlem, April 23, 1951. At a performance of Dope!. *A sea of faces, estimated at 2000, all standing, pushing against a police barrier three feet in front of the stage. One of the ministers of East Harlem Protestant Parish is managing the handheld boom.*

Neil McKenzie is in a struggle with Bob Crouch, who was one of my experts from the street who helped with dialogue.

At lower left, I am looking carried away. Which I was. I'm holding script — because no one else knew the most recent revisions but me.



MARTIN IGER / PETER STACKPOLE



FRAN BELIN

Soul and Latin Theater, 1968, performing at Fort Greene Park (I think) in Brooklyn. Ordinarily the street audiences jammed up against the edge of the stage — reaching out sometimes to fondly touch the foot of an actor. The summer of many riots, I had to get insurance from Lloyds of London.

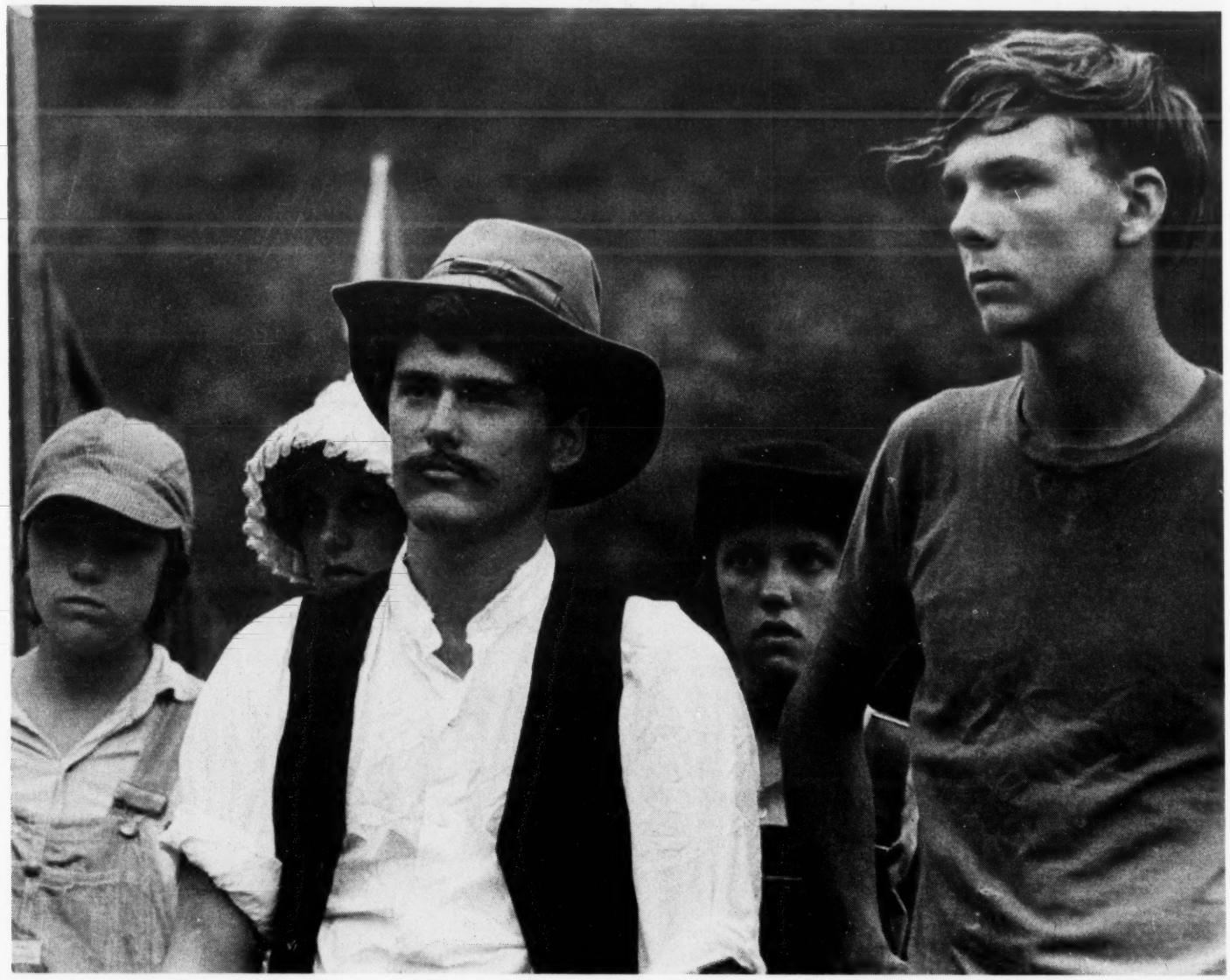
authority, of course, is confidence and the slowly dawning excitement in seeing each other shine. In contrast, it took energy to deprogram the interns, particularly those who had theater experience. With some misgivings, I signed up one ebullient intern when he vowed that he wanted to get cleaned out of a lot of phoneyness. But he could not seem to read a single word without doing a lot of fancy things with it. He had a fine voice. The sessions ground on and on. In a hundred variations, I was saying I didn't buy it, and explaining in a hundred ways what I wanted. Improvs didn't help. He just naturally postured when his foot went on stage. "That's me!" he'd say. "You want me, and that *is* me. That's all there is." And I'd go home and lie awake at night, wondering if he was right. When I tried, "Just say the words, make it as boring as you can," he tried and tried and finally, almost in tears, read a long speech in a monotone, to show how boring it was. Everyone in the barn where we rehearsed stopped what they were doing and listened. It *was* his mere boring self — just as he thought. But it raised the hair on our necks. Interesting how people devalue what is truly precious. He wanted to get cleaned out but hadn't bargained for this, and even when he hit it, at last, he didn't know it. But everybody else did.

Does this suggest that theater not only can exist independently of what is called our national theater, but that it thrives, the greater the distance from it?

Inevitably, this brings up the audience. As I've suggested, it is possible to work with non-actors. Perhaps one could also work with non-audiences. If the theater is a mirror, there is a choice of what to throw in front of the glass. This choice is not really exercised. Instead, a small segment of society (is it three, or five, percent?) is already mirrored to death by the theater in a thousand little silvery facets, reflecting it minutely. But whether the plays are about Indians, waitresses, tycoons, or Bantus, no matter how broad or exotic the subject matter, these plays are groomed, cut, shaped, snipped, and filtered for one small group that attends cultural events with the ease of a greased piston. The little mirrors reflect not the Bantus at all, but the tiny group within that tiny society that watches such things. Yet a lot of theater people consider it a sacrilege to forget about the audience, the *sine qua non*, the only way to measure what one is doing.

Ninety-nine percent of the theaters in America today are looking to an audience that is really less than three percent of the population — the bodies of that small, harassed citizenry that also carries the opera, ballet, art galleries, symphony orchestras, and museums on its aching shoulders. Then one hears complaints about the apathy and lassitude of this faithful little group who, regardless of abuse, keeps showing up at the box office. In fact, maybe these culturally overworked laborers should be awarded medals and allowed retirement. Quite a few professional theaters — totally unprepared, not considering that what they may bring is not appropriate — have tried to do "mission" work and they have reported failures or very qualified successes. In the last ten years, there have been some efforts to reach new audiences. And yet this step is not really thought out thoroughly. It can be seriously compromised by actors, directors, or word-makers who have had training in the theater and are unwittingly trying to train the new audiences to be like the old ones.

To find one's own audience that one loves is what the theater students should be seeking. They could take courses in anthropology and religion, have fieldwork assignments, create a little play made with some portion of a community that is not theater-going. To create material for such "non-audiences," one needs to learn how to take good oral history, study the tapes, listen closely to the rhythms and the stories. Then to learn how to use the material to make little ten-minute scenes, and, above all, how to persuade and guide untrained actors indigenous to the community to act as experts in their own play, and get an organization in the community to sponsor it. The fruit of this process is a little mirror turned toward a new audience. It isn't easy. The success of the process depends on preserving the personal integrity of the non-actors, so that they will do the material you create for and with them in a way that pleases both you and them.



FRAN BELIN

During a performance of John Henry *(1978). Mike Buckland is the Captain, and Benny Allen the shaker. John Henry was played four out of five years by young black women (we cast according to who's best). Benny's sister Tammy is at far left. The other two girls are sisters. All of them in the same federally subsidized program called, in West Virginia, The Governor's Summer Youth Project.*

THE REAL CHORE is to start humbly with a clean slate. If your knapsack is full of bread, cheese, and wine, you don't look for wild foods in the bush. A serious hike in the wilds should be taken alone, with a stout pair of boots, appropriate clothes, and nothing in the knapsack except a day's provisions. That's about the way it is.

What keeps your spirits up, in spite of loneliness, blisters, getting lost, going in circles, eating poisonous berries or roots, meeting up with snakes, getting frozen, wet, or too hot? Nothing but a dream of finding a place, your own place, a piece of chaos, and making it your own, a strong faith that somehow or other you are on a right track and that others need tracks to be blazed into the unknown, and while they can't do this particular longterm search, it is something you can and must do; it is your vocation, however long it takes. This metaphor has its limits, of course, because on your journey you are meeting people, not plants, and discovering what they really are beneath the stereotypes, and you have movements that are indescribable when someone, who otherwise would not, realizes there is another world to live in, that he or she has a value of another order. One finds poetry in a railroader who finally says how he really felt about the great steam locomotives that were to him the cathedral of life, and what he's really nourished by in fishing — not the fish but the symphony of designs, movement, and peace.

Or an anti-social Vietnam veteran living down the road in a cabin with four dogs and no other relatives in the world, seeking a haven in which to heal with the help of liquor. He is drawn to the rehearsals, takes a part, acts himself, my hair prickles. I write a scene, an impassioned tribute of a hillbilly to an Indian, Ira Hayes,

MARYAT LEE

A scene from John Henry. *Jan Banks, a local singing wonder, and Vicki McPherson, an intern, provided the music for that summer.*

from a Johnny Cash record he flagged me down to listen to from the road as it blared out of his house. Ira Hayes, who fought so bravely at Iwo Jima and later drowned in his own vomit in a ditch. The burning high of being, the scene punctured five times by an order he first whispers and then shouts, "Present H'arms." The fallout of war on Powleys Creek.

Or a housewife — rather, a single parent of four kids — who has played the role of mother and father for 20 years, suddenly unleashed on a stage to *be* who she really is: a dreamer, maker of webs and delights, a cross-patch of connivances and gullibilities, a steadfast rock, an old country woman, a haughty town's lady, jilted wife, flashing sensuality, an incredible richness at the core. She's all of these, and more. Lots more. Professional directors, good friends, helped me in a medical crisis two years ago and directed while I was gone. When I returned, she was flat and the joy was gone. She said she was not going to act anymore. Luckily, the next summer there was another kind of crisis — my actors evaporated (as they sometimes do) — and she stood in for them and gradually rediscovered the joy, building back and healing herself, outdoing anything she had done before. Is it therapy? Is it religion? Is it art? Is it all three? Or none?

The theater is due for a redefinition of what it is. "Three planks, two actors, and a passion" has been very comforting to me but doesn't quite fit the bill. The other definition — actor, audience, and word (or gesture) — is a bit pedestrian. But if you take the basic definition of a church — "Where two or three are gathered in my name, there I am" — something begins to vibrate. *There I am* is missing in the theater definition. Perhaps it shouldn't be. *There I am* suggests the ultimate and the present in the same instant that we sometimes call

MARYAT LEE

Audience at John Henry *— at the site of the Big Bend Tunnel. A crew had to go down to the overgrown tunnel two days ahead and use the mowing scythe to clear it. Then scale a cliff to get juice for the lights.*

Presence. What I want in the theater (which originally, of course, was the church) is just this — "Here I am!" in all the facets and analogues and meanings that we are capable of seeing. When it is present, the past is present, the future is present, the word becomes flesh, the invisible is made visible, a door opens to another world, and the actor and audience find a communion based on truth, not a trick or a lie. The theater takes on the meaning of a sacrament when, from time to time, almost by accident or grace, the actor is there, vulnerable, exposed, and we say, "he did it" or "she did it," and we experience this with gratitude and love. It need not be such a rarity. It can happen with plain people, and it also takes away one's breath.

Recently I was asked if EcoTheater were evolving, and in what direction, and did we find find ourselves becoming more like the theater as we grew. I see no advantage in staying at what this questioner called "ground zero." Like any organism, we have to evolve. We are light years from what we were in 1975, and in 14 years we will be light years from here. I've started from scratch three different times over three decades with non-actors and non-audiences, to prove that a viable theater can start from the bottom up. Only with EcoTheater have I stayed on to see what would evolve. To my surprise, actually, I find at this point, as we have grown from a big young company to a more complex adult company, our audience is curiously changing. A few Hinton people are enthusiastic, the others oblivious, some hostile. We are now in transition between being local and being regional, performing only one night a week within this county, at Pipestem State Park, 15 miles south of Hinton. As to what our audience is now, it is changed, and I am not sure what to make of it. Perhaps it could best describe itself, through a letter sent to a local realtor by someone who saw a performance in September 1982.

> . . . We took your advice and "did the town" before returning to Ohio with Jack's mother. I believe that the high point of our trip was that little play you sent us to. That was very exciting. . . .
>
> You may not believe this, but it was actually the EcoTheater that convinced us to move to Monroe County. What a joy! We were, I feel I must confess, quite apprehensive regarding a move to what we considered a totally uncultured backwater. Coming as we do from a large city with all the "advantages" of such, we didn't realize the strong and ever-present cultural heritage indigenous to these hills.
>
> We have an "artificial" culture — the plays, the ballets, the theaters — in our cities, don't we? Mrs. Lee's EcoTheater delves deeply into the spirit of a people and in some magical way is able to show us poor fools a glimpse of it — enough to make us grateful, and make us eager to know the people and the land more fully . . .
>
> Please hold the little farm for us till Monday when our check should arrive. Jack will have to learn to be a farmer and I a milkmaid. Such is progress. ■

VOICE FOR THE COMMUNITY

An EcoTheater Seed Project

EcoTheater is an occasion for the people of a community to explore its own stories and history with fresh perception and find comfortable ways to express it with integrity in public presentation. Attention, pride, and a certain excitement comes to the whole community that sees that its own stories, perceptions, and its own plain people without theater-training are worthy of interest.

Now is the time for the next step to see if this experience can be replicated. We have had numerous inquiries from persons who want to start this kind of theater "back home." Can the seed be planted elsewhere in such a way that — in its growth — it will not just be a copy of EcoTheater anymore than it will mimic the so-called community theater that imitates Broadway. Since we believe it is possible, we plan to select three communities and work out a series of seven two-day training workshops each, *in situ,* starting September, 1984 and culminating in performances in May, 1985.

The groups may come about initially through the interest of a local writer (through WV Writers, or the Bay Area Writing program, both of which Maryat Lee has worked with) or even a group wanting to save and use an old building rather than demolish it, etc.

The three communities, along with our own, will be the beginning of a network, and in turn these groups may seed still other communities to start *per forming* their own stories and histories on a stage. We anticipate that it would take two years for the groups to be on their feet, and part of a small network of *places for seeing* — which was, for the Greeks, the meaning of *theater.*

Maryat's Newsletter ($20/year, 2-3 issues) and more details about EcoTheater's goals and workshops are available from EcoTheater, Route 1, Box 189, Hinton, WV 25951, 304/466-2498.

Paul Zaloom

Theaterwork/ We are Strong

Some of my fondest memories of play-going over the years have been of sprawling on the lawns in local public parks, watching the SF Mime Troupe perform. I've always considered the Mime Troupe to be a flukey Bay Area treasure: smart and sassy politically-engaged theater that reflects the concerns of its audience, and puts on public shows for free! Happily, it turns out they're not as unique as I'd thought.

We Are Strong: A Guide to the Work of Popular Theatres Across the Americas *has write-ups and photos for over 75 such grassroots theater groups, as well as resource, festival, and bibliographical listings. It's a thick directory to the growth of non-Broadway, non-avant-garde theater.* ***We Are Strong*** *was compiled by the people at* ***Theaterwork*** *magazine, a 64-page bi-monthly full of profiles of various groups, essays by theater members, interviews, discussions of political theater abroad, and new items.*

Theater groups of the sort covered here are more likely to maintain a steady roster of performers than EcoTheater (see page 100). They are also, for the most part, more consciously political in content and intent. The vitality of these groups should be seen live to be fully appreciated; however, the print material they've generated is worth checking out as well. —*Jay Kinney*

Theaterwork
David M. Olson and
Jack Sherman, Editors
$9/year (6 issues) from:
Theaterwork
120 South Broad Street
Mankato, MN 56001

We Are Strong
(A Guide to the Work of Popular Theatres Across the Americas)
Volume One
1983; 262 pp.
$15.95
postpaid from:
Institute for Cultural Policy Studies
120 South Broad Street
Mankato, MN 56001

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Paul Zaloom is a performer of one-man found-object animations and paper videotapes or "crankies." In the animations, he uses debris, plastic packaging, old appliances and many other objects as characters and settings for short stories and plays. The paper videotapes are drawn on scrolls of paper that he unrolls while delivering an accompanying narration. He also works with hand puppets, marionettes, and rod puppets.

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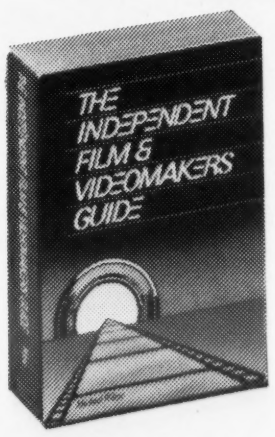
There are so many responses, and all so different. After a children's play a toddler in the front row simply walks up and embraces an actor. A drunk in a park tries to protect us and our show from a heckler (who is really one of us). A junior high school principal tries to have our *Medicine Show* banned within the school system. The local electric utility calls up sponsors of future bookings to try to get them to cancel our performances of *Energy Circus*. Our anti-nuclear comedy inspires a near-fist-fight between two affluent middle-aged men at a posh suburban country club. An unsolicited foundation grant appears because a board member saw our show.
—***We Are Strong***

Living Stage visits the Washington Hospital Center Psychiatric Unit and St. Luke's Hospital. —***Theaterworks***

The Independent Film & Videomakers Guide

A straightforward and clear overview on the business of making film or videos. Wiese covers the most important (and least taught) part of the job: creative deal-making. The book is full of practical tips on how to get a film or video project financed, produced, and distributed without sacrificing artistic integrity. A must for any aspiring independent producer. —*Fabrice Florin*

The Independent Film & Videomakers Guide
Michael Wiese
1984; 386 pp.
$16.70
postpaid from:
Michael Wiese Film Productions
Box 406
Westport, CT 06881
or Whole Earth Access



•

The more precise you can be in your marketing the better chance you have of attracting an audience that will enjoy your film. If you attract the wrong audience or build expectations that cannot be met, you will create a *'negative word of mouth'* that will endanger your film's future.

•

Independents should be encouraged by the fact that MTV receives some 30 new tapes per week. Figuring a yearly production total of 1,560 music videos with average budgets of $25,000 each means that somewhere people are spending upwards of $39 million producing music videos. This is the equivalent of only 3 to 4 Hollywood films. *'What's so encouraging about that?'* you ask. Easy. The record companies are going to have to hire 1,560 directors. You could be one of them.

•

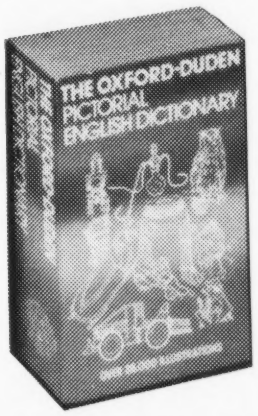
Many people, myself included, like to premiere their own films, regardless of the length, in their hometowns. The advantage is that you will be launching your film to a (hopefully) sympathetic audience. You have the opportunity to test the film before a real audience. You can also collect film reviews that will assist you in marketing the film later. The sample budget that follows should only be used for study purposes. Your opening may cost much more or much less. (You may be able to find a college auditorium or VFW Hall for free.) It is very expensive to showcase a film. The promotion alone can gobble up thousands. *My advice: Rent a small theater and have lines around the block.*

The Oxford-Duden Pictorial English Dictionary

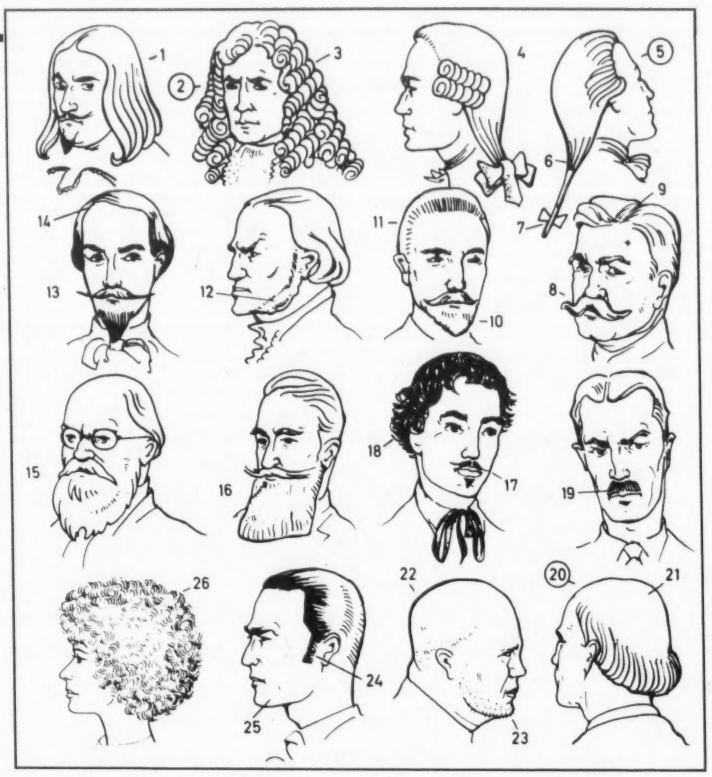
A useful book that proceeds from the premise that you may not know the name of something but you certainly know what it looks like. If you are wondering what to call those pointy shoes Renaissance men wore, you look up the page illustrating costumes and find the name is cracowers. *That a hat with brim turned up to form three sides is a* tricorn. *That an* aglet *is the plastic tip of a shoelace.*

—Joseph Hold

[Suggested by Wayne Curtis]



The Oxford-Duden Pictorial English Dictionary
1981; 820 pp.
$12.95
postpaid from:
Oxford University Press
16-00 Pollitt Drive
Fair Lawn, NJ 07410



1–25 men's beards and hairstyles (haircuts)
1 long hair worn loose
2 allonge periwig (full-bottomed wig), a wig; *shorter and smoother:* bob wig, toupet
3 curls
4 bag wig (purse wig)
5 pigtail wig
6 queue (pigtail)
7 bow (ribbon)
8 handlebars (handlebar moustache, *Am.* mustache)
9 centre (*Am.* center) parting
10 goatee (goatee beard), chintuft
11 closely-cropped head of hair (crew cut)
12 whiskers
13 Vandyke beard (stiletto beard, bodkin beard), with waxed moustache (*Am.* mustache)
14 side parting
15 full beard (circular beard, round beard)
16 tile beard
17 shadow
18 head of curly hair
19 military moustache (*Am.* mustache) (English-style moustache)
20 partly bald head
21 bald patch
22 bald head
23 stubble beard (stubble, short beard bristles)
24 side-whiskers (sideboards, sideburns)
25 clean shave
26 Afro look (for men and women)

Composing Music

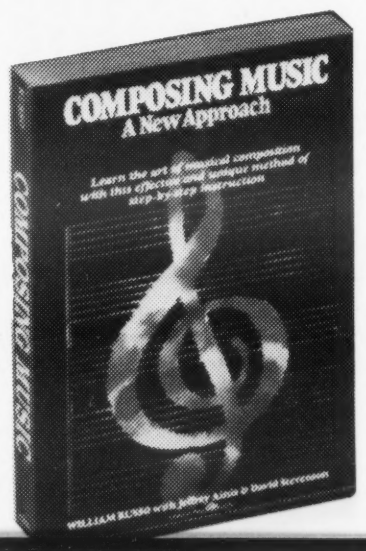
Composing Music *takes a pragmatic approach to teaching composition. It begins with no rules and few instructions, assumes you can read and write a tiny bit, and hands you a very simple composition assignment. Gently, by chapters, it presents traditional composing concepts, including easy work on harmony, melody structure, use of motifs, and so on. The beauty of this approach is there is no right or wrong, no correct results — it is for you to try your wings.*

The second half of the book deals with writing for instruments available to you with techniques in popular music, and with a look at a few concepts from modern "serious" music. This is a wonderful book for anyone who is developing improvising skills or who would like a fun way to explore music. *—Jim Stockford*

•

Get in touch with your voice and your ear.
Sing as you compose and find the tones through what you sing. Playing the piano (or some other instrument) will, of course, help develop your ear, but your main aim should be to get the music in your ear and voice and as well as in your mind and fingers. Learn to sing, tone by tone, what you compose, *while* you are composing it. You should also be able to sing the *completed* series of tones.

Composing Music
(A New Approach)
William Russo with
Jeffrey Ainis and
David Stevenson
1983; 236 pp.
$12.95
postpaid from:
Prentice-Hall, Inc.
Mail Order Sales
200 Old Tappan Road
Old Tappan, NJ 07675
or Whole Earth Access

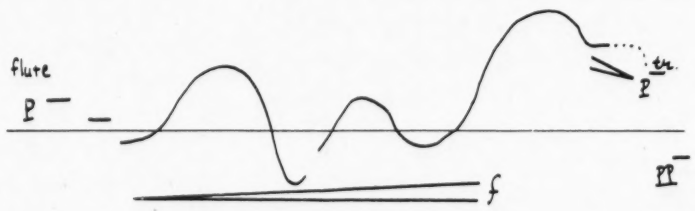


Composing picture music is like playing tennis without the net; there are no rules, only procedures. Your intention is expressed in broad strokes because you cannot be as precise as in conventional notation.

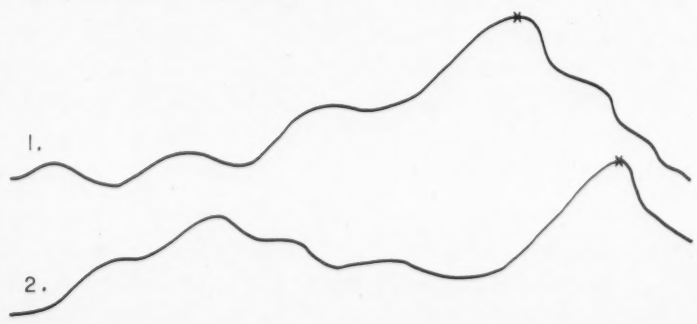
I believe in rules and in guidelines; this workbook is filled with them. Rules and guidelines help you to focus your creative energy by defining the task. You will find this to be true even later, when you have graduated from the rudimentary procedures outlined here.

•

It must be admitted that picture music is inadequately notated, but I should like to point out that conventional notation is very limited itself and owes more to the performance than is generally realized; a good piece often sound entirely unlike what the composer had in mind.



Picture music includes all music that is written without actual tones. Sometimes this type of music looks more like a drawing than a piece of music.



Try to have melodies that have *different* shapes — that reach their peaks at different points:

LOCAL NEWS

SHELBURNE FALLS AND WEST COUNTY NEWS

ASHFIELD • BUCKLAND • CHARLEMONT
COLRAIN • CONWAY • HAWLEY
HEATH • MONROE • PLAINFIELD
ROWE • SHELBURNE

Vol. VI, No. 16 — Shelburne Falls, Mass. — April 20, 1984 — 25 cents

Towns Seek State Help to Fix Flood-Dam

Road Unsafe For Mohawk Track Teams

SHELBURNE FALLS AND WEST COUNTY NEWS

Charlemont Cracks Down On Town Tax Delinquents

by Michael E. C. Gery

If you want a part-time job that's good for your health, write local news for your local newspaper. Chances are: 1) the paper needs a correspondent from your town; 2) you will get paid, though not much; 3) you'll become a local hero; and 4) you'll know what's going on.

If you do a good job, who knows? You may become a famous writer. At least you'll earn a place in town. You'll become like the local farmers — more or less landed in town — at work in the community, and at work for the community. If you live in a small place, you'll get to "know everyone in town." People of all kinds will call you up and want to make friends with you.

I got to know the town correspondent in Conway, Massachusetts, in 1973. Seventy-year-old Frances Holden wrote Conway news for the local daily, which comes out of the county seat and covers 26 towns. That was at a time when the newspaper carried as many correspondents as it could get for $35 per month. The paper wanted news from every village, and many of the villages had reporters like Mrs. Holden. When Mrs. Holden wanted to pass the mantle, she gave it to me. My first day on the job was with her, learning who's on which committee, when the committees meet, what they do, and in general, who does what in town and why. The next day the covered bridge in town collapsed, and I was off and running. I wrote about the bridge a few times, and then the community decided to rebuild the covered bridge, for old time's sake. We did it on weekends. I learned how to shingle a roof along with about 20 other guys, and we all had lunch at the firehouse. Plus, I got some good stories and pictures. One guy said, "This is the biggest thing that's happened in Conway since we got a zip code."

The rest is history. I am now a famous writer. I can walk down Bridge Street in Shelburne Falls, and a lot of people will know I work as a local reporter. Some of them give me news. Some turn and walk the other way.

I can tell you a few things about what makes good local news. First of all, local papers count now more than they have since the 1950s. After television — and now, after computers and satellites — local newspapers have to be local. In my town, we don't read the local paper for much more than local news. In fact, I'm now writing for a new weekly, because the daily paper now runs too much wire copy and syndicated stuff. At the weekly, which is 100 percent local, we find that readers prefer us over the daily because we cost less and give more local news. A good many out-of-state subscribers say they appreciate the weekly dose, because it keeps them in touch with home. And that's what the local people say, too.

Keeping in touch means knowing things like who's getting married, who got a new job, how's business at the tool factory. And it means knowing when the garden club meets and who will speak then. I like to report who's returned from a trip, or who's in the hospital. And we also must report local politics for what they are. You can get carried away with politics — primarily, I believe, because all the stuff is ostensibly public information, and politicians love to talk, and you feel you're doing something for the democratic cause — and most reporters do get carried away. Covering politics is easy.

A case in point about local political coverage is the cable TV broadcast of the town selectmen's meetings in Buckland. They have a little cable TV operation there, and kids film the selectmen on Tuesday nights and air it later in the week. This has been going on for a few years, and now the selectmen get off on it. They dress up for the meetings. They grandstand all the time. They're becoming actors trying to emulate their favorite stars in Washington. And this is extremely local TV. The cable reaches only 80 households. The people who watch the selectmen say it's the best prime-time comedy on the tube.

What's more interesting than local politics is what the bear did in Harold and Nell Hall's yard last week. Or how it is at the Judge house these days now that Pandora has the lead in the middle-school musical. Parents love to talk, too.

And one more thing: If your town has a really small paper of its own, say, a photocopied monthly, write for that one, too, when you can. It's good practice. ■

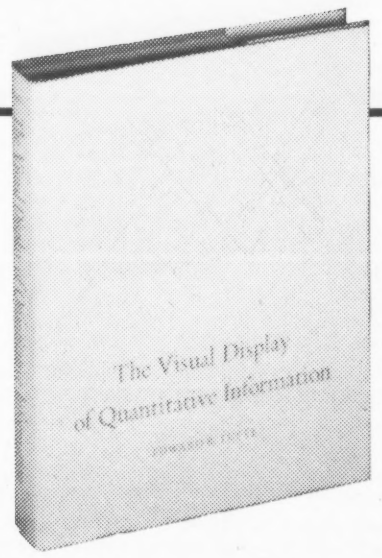
Phil Frank, who occasionally illustrates for CoEvolution, *has a nationally syndicated cartoon, "Travels with Farley." But he does his best cartooning work for* Marin Scope, *the Sausalito town weekly. I've done columns for the* New Scientist, *the Los Angeles* Times, *and the San Francisco* Chronicle. *Some of the ones I'm proudest of appeared here in town in the same* Marin Scope, *to an audience of hundreds. For certain they are the ones I've learned the most from. Only local news is real, maybe, and the reality cuts both ways.* — *Stewart Brand*

The Visual Display of Quantitative Information

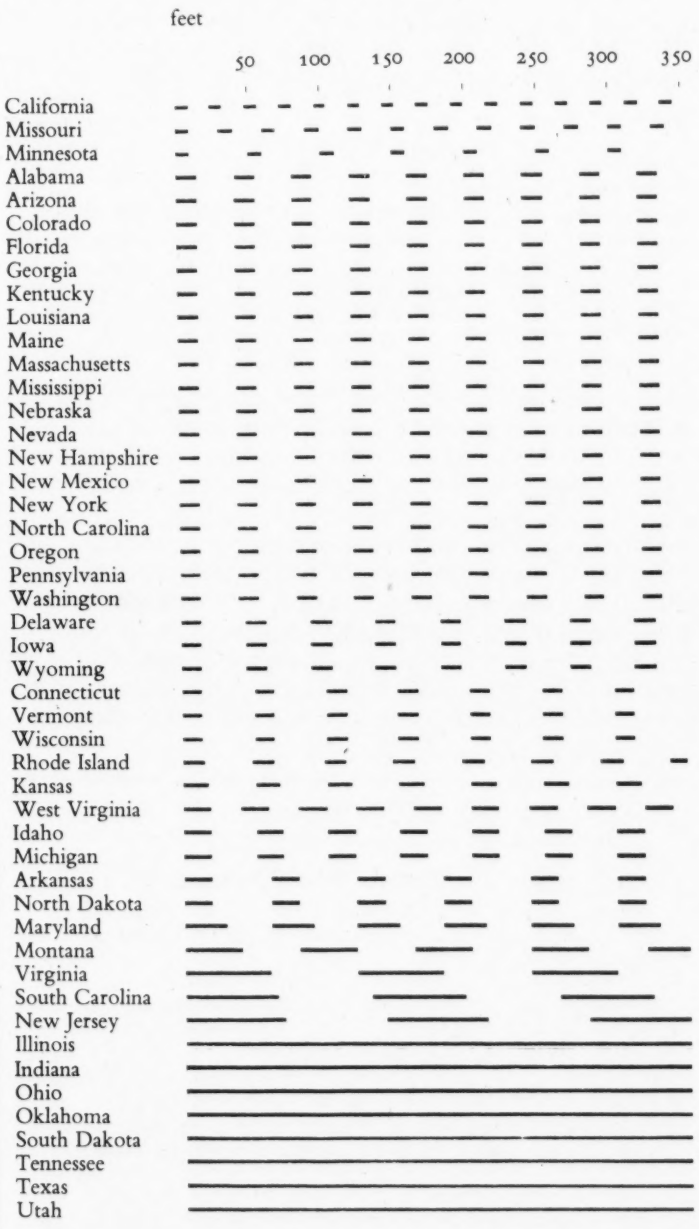
The visual style book. Turn a page in this finely printed volume and you'll be treated to another ingenious chart, that is at once simple, telling, and beautiful. Flamboyant graphs, particularly those dressing up insensible data, are bad craft: "If the statistics are boring, then you've got the wrong numbers." The rules are like writing well — do it honest and clear. Tufte gives memorable, handsome examples of how to display information with integrity and clarity. This book is a good example. It's one that you return to dip into before you pick up graph paper.

—Kevin Kelly

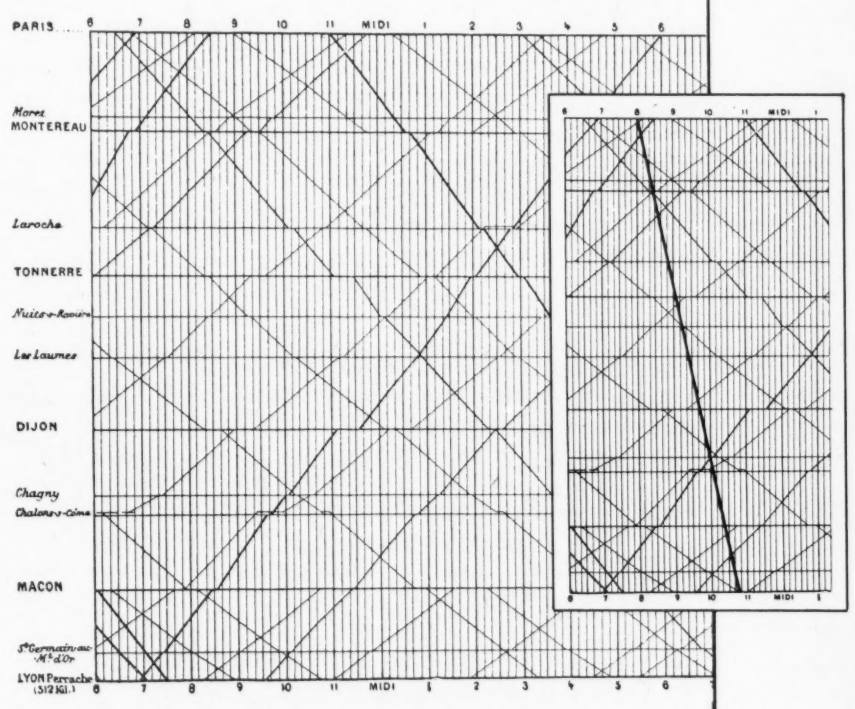
The Visual Display of Quantitative Information
Edward R. Tufte
1983; 196 pp.
$34
postpaid from:
Graphics Press
Box 430
Cheshire, CT 06410



•
Data-Ink
A large share of ink on a graphic should present data-information, the ink changing as the data change. *Data-ink* is the non-erasable core of a graphic, the non-redundant ink arranged in response to variation in the numbers represented.

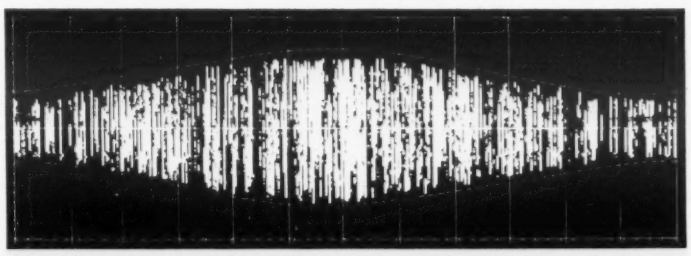


A graphical pun: the visual data as the data measure, as in the living histogram. The chart shows how states once differed in their engineering standards for painting lane stripes on road pavement. Some states marked the road lanes with short dashes and long gaps; others used only solid lines. Portrayed in the graphic is the actual physical pattern painted on the road, with 48 U.S. states ordered by the length of the painted mark

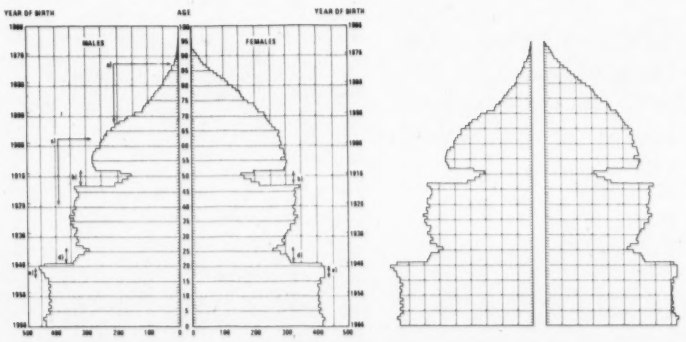


Marey's graphical train schedule for Paris to Lyon in the 1880s. Arrivals and departures from a station are located along the horizontal; length of stop at a station is indicated by the length of the horizontal line. The stations are separated in proportion to their actual distance apart. The slope of the line reflects the speed of the train: the more nearly vertical the line, the faster the train. The intersection of two lines locates the time and place that trains going in opposite directions pass each other.

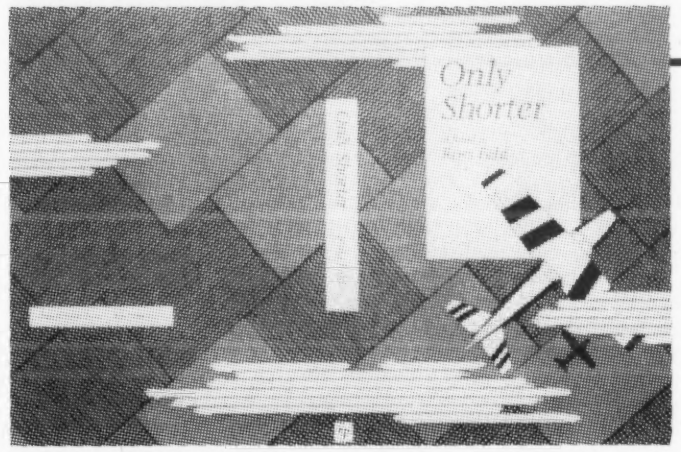
In 1981 a new express train from Paris to Lyon cut the trip to under three hours, compared to more than nine hours when Marey published the graphical train schedule. The path of the modern TGV (*train a grande vitesse*) is shown, overlaid on the schedule of 100 years before.



An annual sunshine record reports about 1,000 numbers per square inch (160 per square centimeter).



Population of France, by age and sex: January 1, 1967.



Occasionally I have free rein to develop an image for a book. This is an example of art that was allowed to wrap the entire book and was planned to do so. From reading the book and discussions with editorial, the image of an airplane flying over patterned fields was agreed upon.

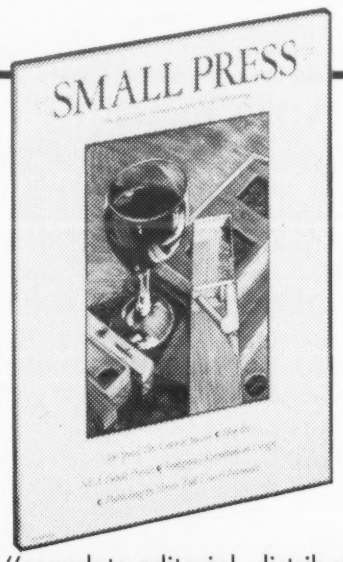
Small Press

Small publishing works. Book buyers say so. Three thousand thriving small-time book publishers say so. Now the big publishers are paying attention. One of the giants, R.R. Bowker, owned by Xerox, is betting on small presses by launching ***Small Press*** *just for them. It's for independent publishers of specialized how-to-books, or love-fed literary magazines, or quality regional books. Done with the graphic care a fine book would be, this magazine profiles successful small presses (more and more of these), and the technical details of "doing it." Both fine bookmaking and wise economic bookkeeping are stressed in this encouraging journal. —Kevin Kelly*
[Suggested by Steve Cohen]

•

Special application requirements for small-press assistance provide that publishers attach up to two pages of supporting material "in order to put the Endowment-supported project into context." This is your opportunity to introduce yourself, and you should give high priority to writing clear, fact-packed descriptions of your history, your plans, and your goals. The NEA is

Small Press
(The Magazine of Independent Book Publishing)
John F. Baker, Editor
$18/year
(6 issues) from:
Small Press
P.O. Box 1429
Riverton, NJ 08077



specifically looking for "complete editorial, distribution, promotion, and development information," and you should phrase these succinctly in narrative form and include overall budget figures for the entire year.

•

Although there are more than 14,000 public libraries and nearly 5,000 academic libraries in the United States, only a handful of these libraries seek out and purchase a significant number of books published by small presses each year. Thus, book publishers who produce short runs — 500 to 1,000 copies — can expect to sell no more than 40 percent of them to libraries.

•

Many small publishers discount the importance of participating in the annual conventions of the American Booksellers Association and the American Library Association. As most of you know, both events are large gatherings of book publishers, editors, distributors, vendors, publicists, authors, and salespeople where ideas are discussed, proposals are floated, and contracts are negotiated and sometimes consummated. Our attendance at these conventions, particularly the 1982 ALA convention, has done more to make the *Goodfellow Catalog* a success than any other single act or event has. These conventions are not to be missed if you are committed to publishing as a way of life.

Editing Your Newsletter

Beach, who has helped to develop hundreds of newsletters, tells you absolutely everything you need to know to publish a quality bulletin. He takes you step-by-step through the production process — from establishing goals to distribution.

Included are valuable tips on format, copyright laws, cutting costs and dealing with printers. Whether you want to put out a chatty one-pager for your club, a slick large-circulation money-maker or something in between, this book will help you to get it right the first time. There are plenty of specific examples and reproductions of actual newsletters to make everything clear. —Mary B. Bowling

•

Making these assumptions, how many hours work should each issue take? Here are some guidelines based upon the nature of your newsletter.

One sheet, two sides, your own typing or word processing, print in-house or quick printer: **ten to twelve hours**.

Four pages (11 × 17 sheet, two sides), your manuscript to word processor or typesetter, commercial printing: **twenty-five to thirty hours**.

Eight pages, typeset, commercial printing (is more than double the work of four pages): **sixty-five to seventy hours**.

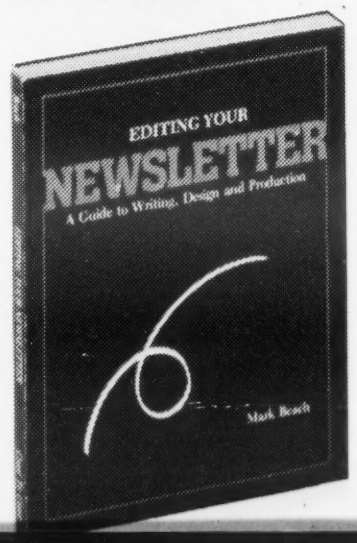
Add second ink color and, presumably, more complicated graphics, pasteup and printing: **increase times by twenty percent**.

Add supervisor who ignores deadlines, checks every word, insists upon last minute changes, requires you at every staff meeting, and writes deadly prose far over space allotment: **double times**.

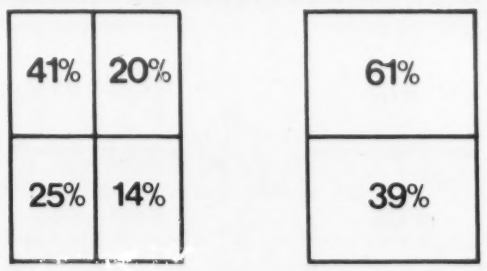
•

Don't try to be too professional . . . the value of the newsletter is in content — not in slickness of paper or cuteness of design.

Editing Your Newsletter
(A Guide to Writing, Design and Production)
Mark Beach
1982; 122 pp.
$11.45
postpaid from:
Coast to Coast Books
2934 N.E. 16th Ave.
Portland, OR 97212
or Whole Earth Access



Here are two diagrams showing the percentages of time people spend looking at different areas of a page.



Media Law

When you're about to publish your profile of the deaf and blind nuclear power plant inspector, or run a photo of the President with his hand in the till, pull out this book. Better yet, read it while you're still working on the story. It lists all the ways a journalist can run afoul of the law, and gives dozens of practical tips on how to get the story wthout getting a subpoena. Any exhaustive treatment of the law can be eye-glazing stuff, but Galvin knows how to write English, and Stein's sketches are hilarious. ***Media Law*** *covers censorship, libel, invasion of privacy, the Freedom of Information Act, and how to get into the city council meeting when the mayor wants to keep you out.* —*William Rodarmor*

•

An individual member of a group which has been libeled can bring an action under certain limited circumstances. Suppose, for example, a columnist after a Super Bowl game asserts that Dallas Cowboy fans are stupid and boorish. The general rule is that if a group is so large the reader or listener will be unlikely to understand specifically to whom the defamation refers, the courts will dismiss the action. The usual, but by no means absolute, rule of thumb is that a group of twenty five or more is too large to support a libel action.

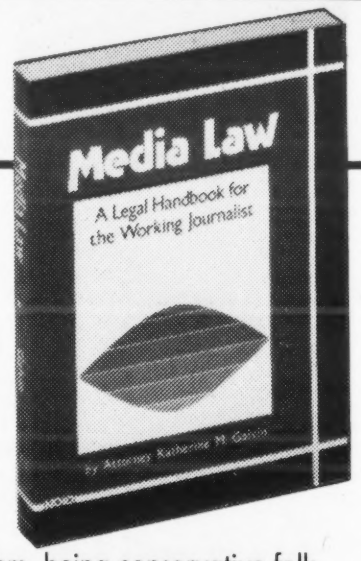
•

A widely publicized California case has held that any time an individual is recognized and ridiculed in a work of fiction, the person can sue the publisher and the author of the work for libel. This is true even if the person is disguised by use of a false name, description, etc. The result has been for lawyers to counsel authors, film makers and dramatists whose characters are drawn more or less from a real person to add several extra layers of disguise. Even if this results in a 7'2" basketball player being depicted as a 4'10" Japanese woman jockey, the media lawyer would think the protection from liability is worth it. Lawyers, being conservative folk, often tend to get carried away imagining problems.

•

Many reporters routinely record telephone conversations with news sources without informing the party on the other end of the line. Since these conversations almost always occur in a private context (i.e., telephone in a home or business office) the federal law permits such taping only if a non radio-activated device (such as a tape recorder) is used and the conversation is used for background only. Further, although such a recording may or may not be illegal under the state's law as well, it does violate telephone company tariff regulations.

Media Law
(A Legal Handbook for the Working Journalist)
Kathy Galvin
1984; 215 pp.
$15.95
postpaid from:
Nolo Press
950 Parker Street
Berkeley, CA 94710
or Whole Earth Access



The International Shortwave Listener's Program Guide

To hear the other side of the story in an international argument, you can turn on a shortwave radio and get the version from the homeland — in English. Unlike foreign newspapers, it's free. And the music in between beats AM. To find out where to put your dial and when, tune into this monthly magazine. It lists all known English language broadcasts reaching America, and keeps tabs on these global whisperings. —*Kevin Kelly*
[Suggested by George Wood]

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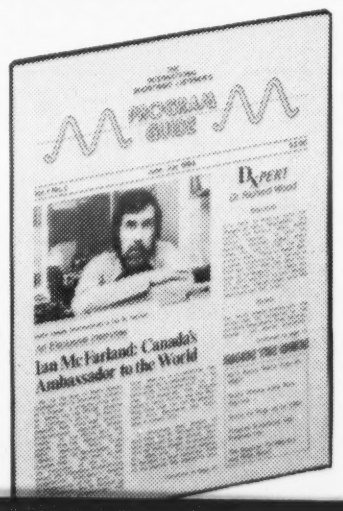
Rock and Roll Shortwave
"One U.S. shortwave publication surveyed its readers in 1983, finding that WRNO-Worldwide was the 7th most listened to shortwave station, behind such stations as the BBC, the Voice of America and Radio Moscow.

There are those who have said that rock and roll has no place on the shortwave bands. Then, there are those who say, 'I think your format is great for shortwave, as it is more typical of the American way of life than the format used by other U.S. shortwave stations.'"

The International Shortwave Listener's Program Guide
Lawrence J. Miller, Editor
$19.95/two years (12 issues) from:
Miller Publishing
424 West Jefferson St.
Media, PA 19063



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Clandestine
Most clandestines aren't in English—Spanish, Portugese, Arabic-Farsi, Chinese and African vernaculars are more typical languages used by unofficial anti-government broadcasters, but here's one that is. It's the Voice of the Sudanese People, vehemently opposed to the Khartoum government of President Jaafar Nimeiri and transmitting over facilities of Radio Jamahiriya, Libya. Since its location is known, perhaps we should call it a quasi-clandestine. Anyway, it was heard with a talk in excellent English at 1540-1555 on a Wednesday (not daily) on 17940. At 1555 it continued with Sudanese music and at 1600 went into Arabic. The speaker, an exiled opposition leader from the black southern Sudan, where English is an official language alongside Arabic, criticized the earlier rebel movement Anyanya 2 but said "the revolution is now led by the people" and called for a "united society."

A second clandestine, and this one really of unknown origin, is Radio Iran, the voice of the National Front for the Liberation of Iran. It's noted on 9594.8, producing a low rumbling heterodyne against Radio Free Europe's Romanian service on 9595, around 1530-1630. All in the Farsi or Persian language, with anti-Khomeini talks and songs.

•

Egypt
Although Radio Cairo is rather popular with North American listeners and has good, clear announcers who speak distinctly and make a point of dictating listeners' addresses and greeting them personally, it must be regretfully said that Radio Cairo's technical standards are the lowest of any major international broadcaster. Mixing products, drifting frequencies, parasitics and harmonics plague Radio Cairo. A current drift is from nominal 9850 to 9858.5.

THE SNORES OF PERCEPTION

by Woody Igou

THE FIFTH ANNUAL MADAME BLAVATSKY CONFERENCE ON THE FRINGE

JAMES DONNELLY

Dear Special Folk,

It's the Year of the Wombat, Pluto is in the House of Furs (just last week its Seamy Conjunction with Venus was watched by thousands on Late Nite Cable), and ectoplasm prices are skyrocketing on the Para-Commodities Exchange. These are Special Times! Consider: At this very moment clocks all across the globe are pushing back the veils of time. Science tells us that Consensus Reality is but one of many realities, that penguins *never really get cold.* Plain geometry is out, rococo geometry is in — curved, oiled, saddle-shaped space, twisting wormholes, quasar molding, bent eons. Other dimensions are clogged with travellers, reservations are required. People burst into hallucination as they once bursted into song, soaring into the future, the past, returning C.O.D.

The Fifth Annual Madame Blavatsky Convention on the Fringe is dedicated to the peaceful exploration (recall Geller's thought that "bending is better than rending") of these Other Realities, bringing together the World's Enlightened for one day in the cause of Spiritual Evolution (no personal checks please).

For those who haven't already divined the schedule:

MORNING LECTURES: _____

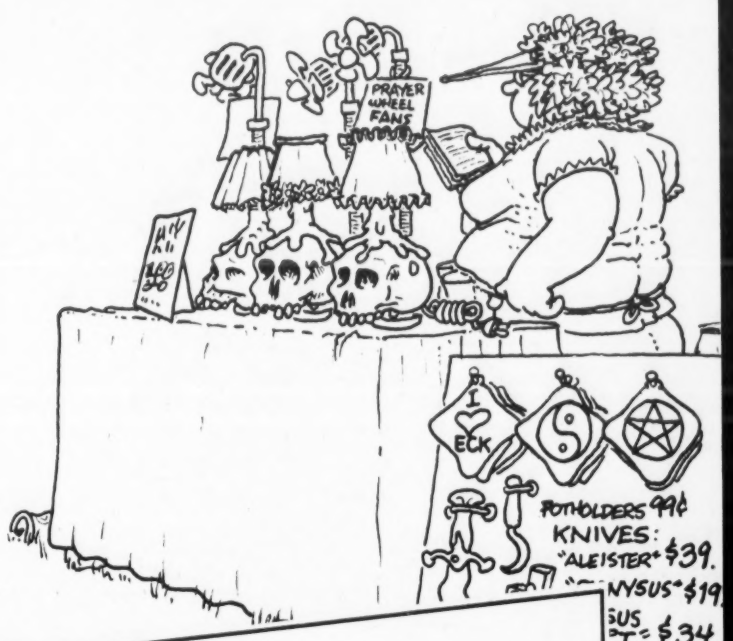
9:00 ***Inkus Profundus: The Lost Tattoos of Gurdjieff***

Cast off by Gurdjieff in 1916 after he found them "tacky and unremarkable," these Sanskrit tattoos have been tracked down by Claus Verterbleen and his aura-hound "Ned." Mysteriously, the tattoos were discovered on the roof of a remote Tibetan cave along with the fresh footprints of Merce Cunningham. 30-minute biodegradable slide show.

continued

This wit comes roundabout via Allen Ginsberg and a TV game show. Ginsberg spotted it during a three-week creative art fellowship in New Smyrna Beach, Florida. Its author, 27-year-old Woody Igou, with law degree in hand, figured there might be more to life than courts, bummed around until he wound up on the game show "Sale of the Century" and, using a lot of useless arcane knowledge, won a small fortune. His windfall gave breathing space, a chance to practice writing instead of law, and hatched this piece which he wrote during Ginsberg's workshop. When it arrived, we read it, looked at each other, looked at our loony typesetter, James Donnelly, nodded, and handed it to him to illuminate.

—Kevin Kelly



Coping with the One-Night Out-of-the-Body Stand

A panel of Spiritually calloused singles discusses the ups and downs of casual ectoplasm exchange. R., 32, tells all in relating her atemporal fling with the spirit of Houdini. Tips on Dear John letters to the dead, etiquette in the Ether, etc.

10:00 ***Black Holes, Rosicrucians, and the Non-Surgical Facelift***

What secrets did these fresh-faced ancients possess? Find out how to use gravity's own scalpel to gently pull out stubborn wrinkles, lift liver spots to the orbit of Pluto, or transmute bunions into quick cash.

The Hieroglyphics of Woodrow Wilson

Self-ordained Beige Witch Sylvia Cloven (whom you may remember as the coy leader of last year's workshop *Live Pinatas for Walpurgis*) will demonstrate the amazing powers of an Etch-a-Sketch she recently found near the Yucatan in the ear of an Olmec Head. The toy, nicknamed the "Zodiac Bubble Chamber," picks up out of the ether old League of Nations debates, which it transcribes, without human intervention, into "shocking hieroglyphics, forbidden punctuation." A must for mystery buffs.

FILMS FROM THE VOID:

11:30 ***Panspermia Without Zipcodes***

Stonehenge: Swizzle Sticks of the Gods?

E. Von Daniken builds a logical case for his theory that ancient astronauts used the English countryside as "a place for highly advanced Happy Hours," and offers dramatic proof of the existence of a hundred-foot diameter daiquiri umbrella buried nearby. From this evidence he hopes to show that the Dark Ages were merely an effect of *The Hangover of the Gods.* Book-signing following film.

The Zen of Flossing

Repelling the Tartars with mindlessness. B.F. Skinner stars as a close-minded dentist whose rigid, ruthless regimen of flossing has the mouths of the town's teenagers inflamed, thereby threatening the Prom. Salvation arrives in the form of a gentle, sloe-eyed pharmacist.

LUNCHTIME ENTERTAINMENT:

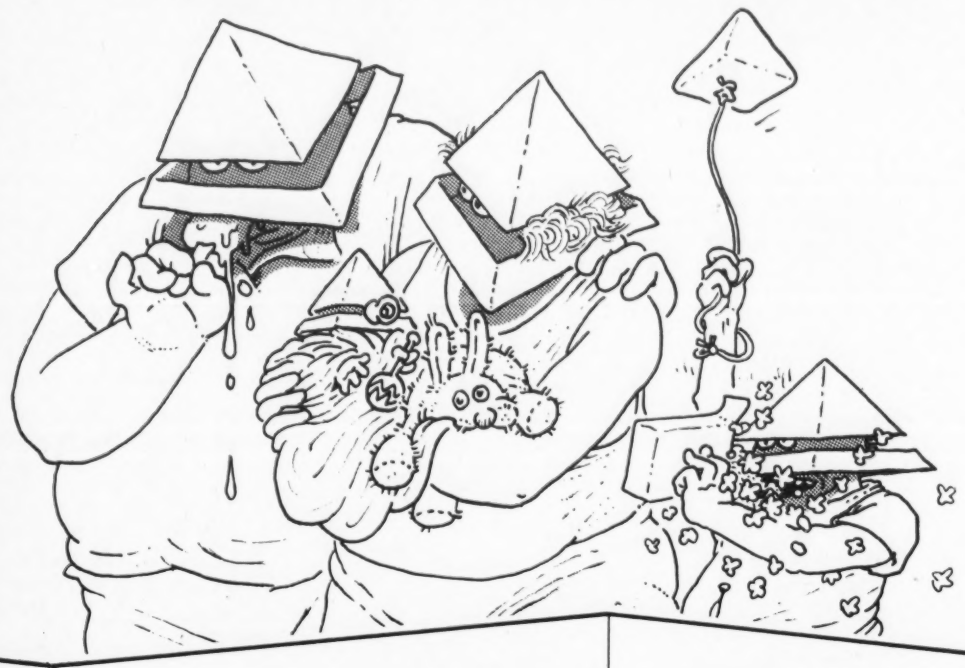
1:00 ***The Koan Heads***

Ineffable comedy brought back from the East in parachute luggage, sure to invoke the sounds of at least one hand clapping.

Snake Egg Handling

Exciting ritual performed by members of the Fundamentalist Church of Wavering Faith.

continued



LUNCHTIME ENTERTAINMENT *(continued)*

The Wu Li Dancing Girls

Continuous lunchtime performance of the Modern Kabuki classic.

The Uncertainty of Converting the Practice of Footbinding to the Metric System

Certain to whisk the audience into a state of blissful imbalance. Hold on to your turban!

AFTERNOON LECTURES

2:00 ***Kirlian Photographs, Ectoplasmic Paparazzi, and the Law.***

Learn to stop this theft of selfhood by aura-snatching cameramen. Put an end to revelations of embarrassing liaisons with lower plant forms. Lawyer Rhamad Vitavisha (formerly Ozzie Cluck) explains the nuances of the transdimensional right of privacy. No cameras.

Mu and Tofu: The Ironic Pentameters

"Dr." Ira Bledsoe, author of the vegetarian bestseller *Lemuria and Lima Beans,* shows you how to invoke Soybean rhyme chants from this lost land to both "season" and "balance" meals. Initial lesson includes "Iiozumik Xugguc" (Sodium Reduction Chant) and the popular "Fyllagas Filands" (Chant for Telekinetic Lazy Susan).

The Itch of the Cosmos

Sri Lama Willie Futch demonstrates the far-reaching effects of Machs Principle (Cosmic Interpenetration) when he reveals an itch caused by the Crab Nebula. Sorry, this is the first public performance of the transmitigation of mites and is not open to children. Orgone generators provided.

WORKSHOPS

4:00 ***Dowsing for Wellness***

Holistic approach to finding the "deep self," septic tanks. A guaranteed geyser of good health, water retention, or your money back in a kalpha! Bring emu wishbone, or equivalent.

Rolfing Feral Children

Practical advice on how to let your fingers do the walking up the backs of those little Calabans. Also useful for those wishing to soften up dogmatic empiricists, dead Gnostics.

Cleaning Up After Necromancy

Bartrauma O'Brien, editor of *Entrail's Weekly*, demonstrates his technique of "hermetic evisceration," a method of prophecy certain to lower laundry bills. In addition, "Goat Out," the hot-selling new sorcerer's bleach, will be on sale.

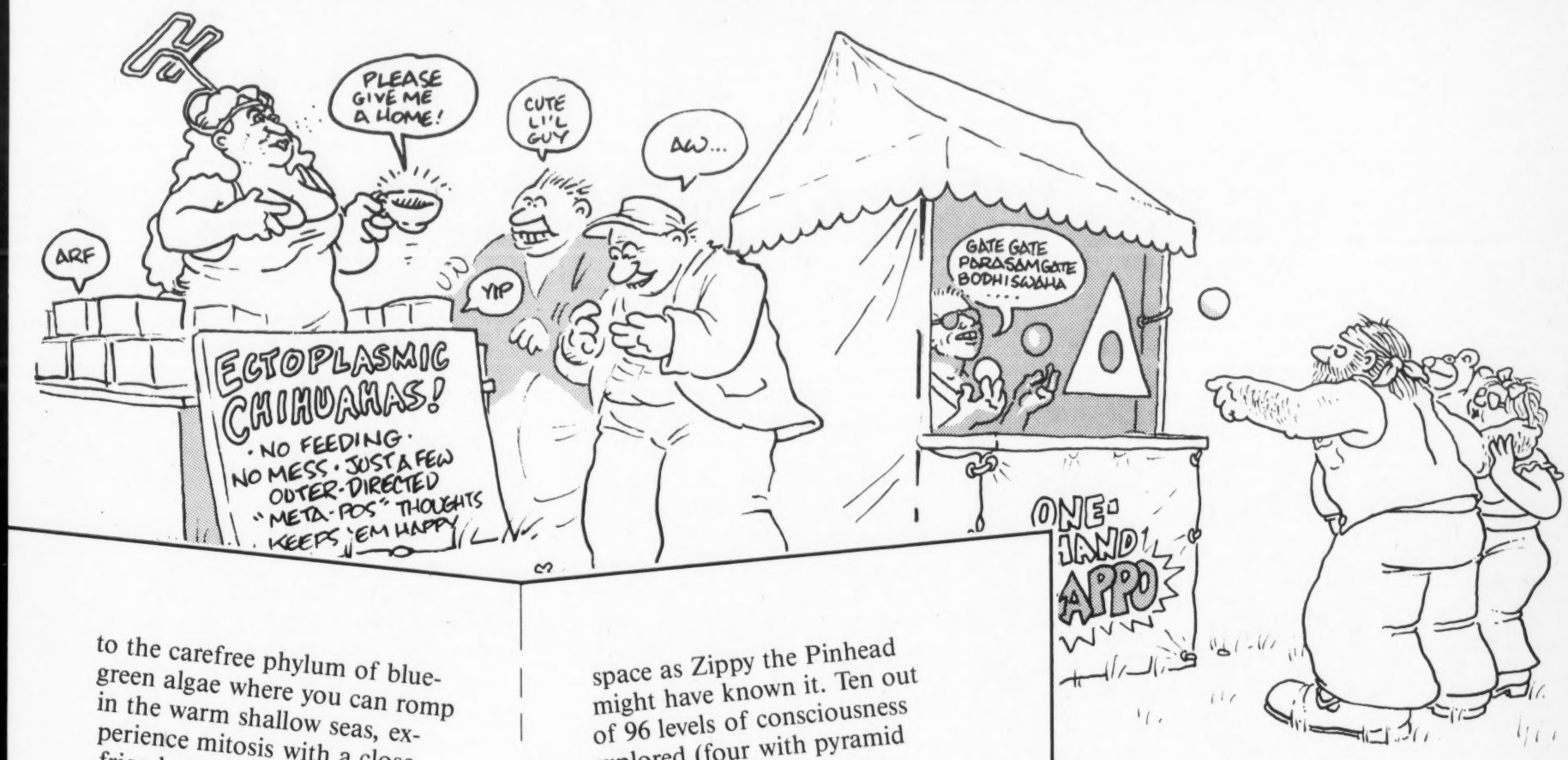
GROUP CONSCIOUSNESS RAISING

6:00 to ? ***Tarot Breathing Quorum***

Learn the poignant/piquant Zoroastrian practice of inhaling through ancient decks of cards, soiled to perfection by early Pagan gaming. Reach maximal oxygen-ball lightning deprivation — Body and Soul restored, rethreaded, and Fletcherized — achieving: lightheadedness (Fedora Interface), Bukowski Flush (Portgasm), and ossification of extremities (Partial Rodinization). Flesh poked with knitting needles will *hardly bleed at all* (Punctured Equilibrium).

Primal Green Therapy Session

Group trance devolution. Hypnotist Fritz Pickett takes you to "a more tranquil time," beyond childhood, beyond Homo sapiens,



to the carefree phylum of blue-green algae where you can romp in the warm shallow seas, experience mitosis with a close friend, or just lay back and soak up cosmic rays. (Those not comfortable with unisexual reproduction can pause at trilobite and dally.) Bring eardrops and speargun.

Cranial Bobsledding

Through the ingestion of Mexican tunic buttons time-space as you know it will become time-space as Zippy the Pinhead might have known it. Ten out of 96 levels of consciousness explored (four with pyramid plumb bob only). Past participants have experienced: "timeless penmanship," "increased spleen awareness," "Meister Eckhart's Socks," "fez archetypes," "astral bivalve guides of light" and more/less. Mirrored ceiling isolation-jelly beds and notarized deification upon request.

REMEMBER — STILL ON SALE FROM OUR CATALOGUE!

Music of the Spheres

Wilma and Samuel Sphere's timeless collection of Easter Island rhumba music played on the backs of migrating hawkbill turtles with gopherwood mallets smuggled out of Mount Ararat in the mouths of wayfaring Sufis. Current Release $9.95.

Coccyx Cushions

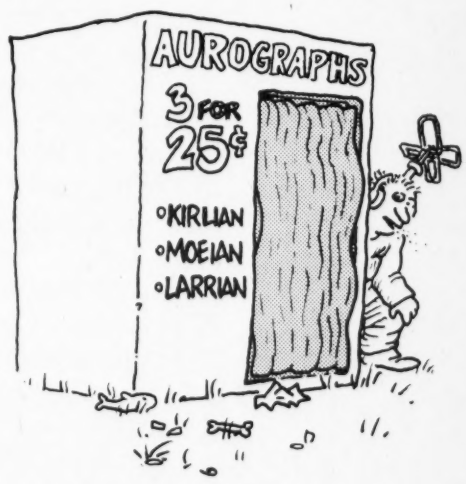
Perfect protection for the novice levitator. Formerly marketed as *Lilly Pads*, these pure foam mats are now reduced to $15.95. Act yesterday and save!

The Snore Sonnets of Edgar Cayce

(42-record set) The Master's metered narcolepsy captured in illuminating Dolby stereo, $149.00 (includes signed and numbered eyesleep).

P.S. I shall be sending out "mental maps" shortly. Those not able to receive directions should go bowling instead.

"See" You Soon, Z. ■



27 GATE FIVE ROAD SAUSALITO CA 94965

GOOD MOVIES: FALL

by Sheila Benson

ONCE UPON A TIME IN AMERICA

Do not judge Sergio Leone's extraordinary, high voltage **ONCE UPON A TIME IN AMERICA** by the butchered mess that was in theaters in early June. The proper 3 hour 47 minute version is scheduled to open the New York Film Festival, and one can only hope that that exposure will trigger bookings across the country. A pungent, haunting memory piece with moments of enduring beauty, it is a film about gangsters from a very reduced and personal viewpoint, in which you are always made aware of the erotic possibilities of violence.

A little more than a third of the film follows the boyhood of these eventual gangsters in the Lower East Side's Jewish ghetto, which is like something out of Henry Roth (**Call It Sleep**). One guilefully seductive scene is the luring by young Deborah (Jennifer Connelly) of the swaggering Noodles (Scott Schutzman). She turns him on by reading him the Song of Solomon and keeps him in check at the same time by calling him a punk, not worthy of being her beloved. These two will become Elizabeth McGovern (the film's weakest casting) and Robert DeNiro, who with James Woods present opposing sides of a two-bit American coin, the romantic and the pragmatic. (Leone, it is clear, prefers the DeNiro romantic.) In addition to DeNiro and Woods, Tuesday Weld is particularly fine in a large, excellently chosen cast.

★ ★ ★

UNDER THE VOLCANO is going to ruffle the feathers of all those Malcolm Lowry fans, content to drown in his many-layered prose, but I must confess that for me the heart of the novel has been preserved in young Guy Gallo's lean, impressive screenplay, and John Huston's rich mounting of the film has filled in its soul. Albert Finney's Consul, a last-stages alcoholic, is a consummately triumphant performance. He seems to be working on three levels at the same time, each one perfectly clear to him. The Consul is desperate for the love of his wife, Jacqueline Bisset, whom he can nonetheless never forgive for her brief affair with his half-brother (Anthony Andrews). The action places all three together, during a 24-hour period in Cuernavaca in 1938, under a volcano of world war threatening at any moment to erupt, and with Naziism in the form of the *Sinarchista* movement spreading to Mexico. Huston, with the great cinematographer Gabriel Figueroa, moves gently and with great sense of place around this small village, a benign view except for the last setting which is a true vision of hell.

★ ★ ★

The most all-stops-out fun you're going to have this year may come from a smart, densely packed contemporary comedy called **THE ADVENTURES OF BUCKAROO BANZAI** directed by W.D. Richter and written by Earl Mac Rauch, which takes almost three visits to get even 3/4's of its deadpan jokes. A satire on those blithering team movies, this gives us Peter Weller as Buckaroo Banzai himself, a multi-talented modern man: superb neurosurgeon, particle physicist, jet car driver, and head of a hard-rocking bar band called the Hong Kong Cavaliers. (He's part Einstein, part Adam Ant, with the cool of Jacques Yves Cousteau.) Every jut-jawed member of Team Banzai is splendid including Perfect Tommy (blond Lewis Smith), but you may lean toward its newest member, Jeff Goldblum, who still has a few rough edges to smooth down. Buckaroo is coolest of the cool and hippest of the hip; he walks without disturbing a blade of grass, and calms his fans (legion) at one of his band gigs with this arresting thought, softly delivered: "Just remember, no matter where you go . . . there you are." (Marin County, your spell is indeed everywhere.) Opposing him is John Lithgow, as the thickly-accented Dr. Emilio Lizardo (the most villainously wonderful of all Lithgow's performances yet) and an unnumbered amount of extra-terrestrials who all rejoice in the same first name — John — and look in their earthly disguises like Rastafarians. There's John Big Booty (pardon, Bigbooté), John Ya-ya, John Parker, John O'Connor, and so on. Useless to try to explain. Trust. Go!!!!

★ ★ ★

THE NEVERENDING STORY, a shimmering adventure, is ostensibly a kid's movie. It is that, possibly a children's classic, but it's something more, a resounding myth with a revolutionary message: the most important world is the inner one, the fortress of our dreams and hopes, which can *only* be reached through books. And that interior world is "all we have to set against reality." Wolfgang Peterson (**Das Boot**) might seem at first an unlikely director to lead the crusade for the life of the imagination, but

THE ADVENTURES OF BUCKAROO BANZAI

UNDER THE VOLCANO

THE NEVERENDING STORY

he has turned out an epic fantasy with both abandon and thoughtfulness. Each detail of his production is exquisite, from a silky, shimmering-scaled dragon, the Luckdragon, with the eyes and gentle spirit of a cocker spaniel, to a towering pair of sphinxes in a midnight blue, Ozymandias desert, to the most perfect fairytale princess (10-year old Tami Stronach) the screen has ever beheld. Let a 10-year old take you, or be brave and take yourself. It's a refreshing surprise.

★ ★ ★

The most recent of Scottish writer/director Bill Forsyth's gentle comedies, **COMFORT AND JOY**, is set in a small Glasgow radio station and centers around a middle-years, sandy headed, seemingly entirely unmemorable chat show host (glowingly played by Bill Paterson) who is having a pretty bad week. It is Christmas. His long-time girlfriend, after one of her frequent straight-faced and entirely successful shoplifting forays, makes love to him passionately and decamps. Bone-wretched, with only his job to connect him to the world, Paterson begins to make little tentative forays outside himself, and finds himself in the midst of internecine warfare between two rival ice cream-wagon companies. Like **Local Hero** or **Gregory's Girl**, this is full of unbarbed, intensely personal wit which grows on you. You might wish for a little less ice cream war and more of Forsyth's grand, deadpan characters — and then perhaps you mightn't. It's a fine, rich treat in any case.

★ ★ ★

We've just had Filmex in Los Angeles, and in a burst of optimism, in no way reflected by the current state of film distribution, I want to alert you to two films, one a must-see, this year's Cannes Best First Film prize-winner, **STRANGER THAN PARADISE** by New York director Jim Jarmusch; the second a slightly more commercial vehicle, **Hard Choices**, a notable debut for its writer-director Rick King. An inky black (and white) comedy, **Stranger Than Paradise** is cool avant-gardism, starring actor/musician John Lurie, of The Lounge Lizards, who unwillingly and ungraciously puts up his young cousin Eva from Budapest for 10 days in his scruffy Bronx apartment and changes the course of his life. How this film manages to be, cumulatively, one of the single funniest experiences in recent memory is still something I'm trying to fathom. It's peopled with three characters of distinctly constricted horizons; everything looks the same — the Bronx, Miami, and Cleveland (city of light, city of magic) — and it is really about alienation and missed communication. But wonderfully, memorably droll. It's also an American foreign film, a remark which will come clear only when you see it.

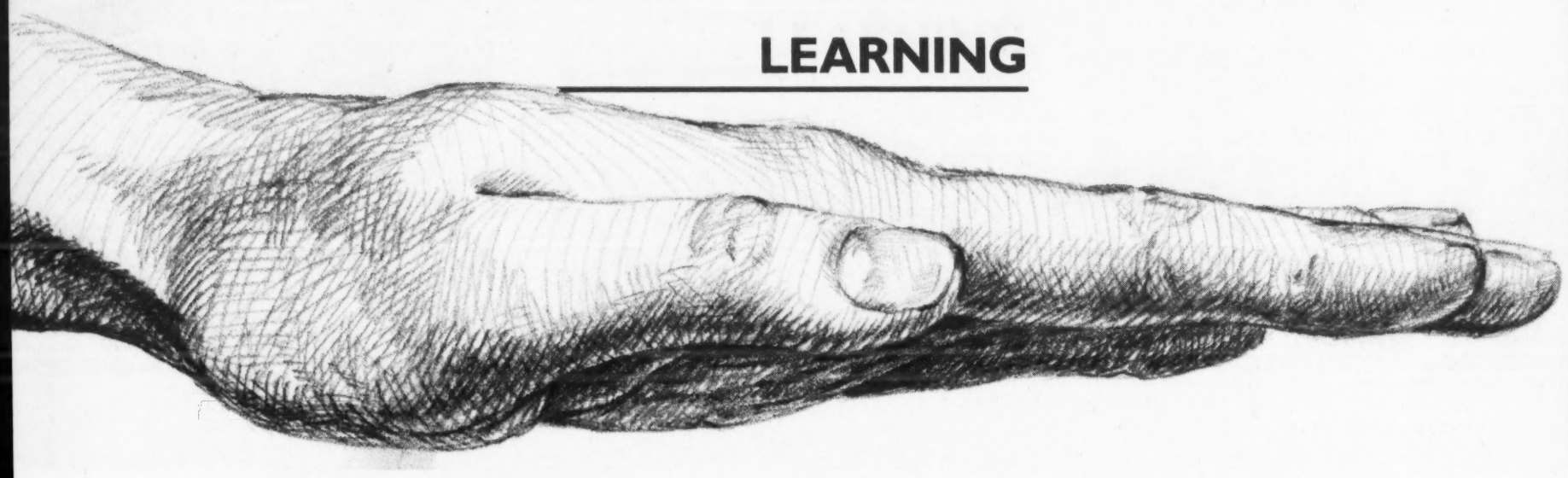
★ ★ ★

HARD CHOICES makes far fewer demands. The story of a 15-year old pulled into a drug-related robbery with his two older brothers in the back country of Tennessee, it begins as a view of young offenders tried as adults, and ends as a sort of love story/sort of cautionary tale, absolutely enthralling all the way. The cast are mostly New York actors, and all exceptional, with John Seitz excellent as a compassionate sheriff, Gary McCleery as the boy, Margaret Klenck as a far-too involved social worker, and John Sayles as an ex-radical friend of the beautiful Klenck's, now a powerful drug importer.

★ ★ ★

PURPLE RAIN

PURPLE RAIN is hot, jagged, and garish, but it's no more resistible than Prince himself. Where it differs from every other backstage look at a performer's life and loves is in the ring of pain you catch behind the posturing. Written, directed, and edited by Albert Magnoli, a director known previously only for a 23-minute short film called **Jazz**, a lot of the movie looks like the MTV hit that came out of it, "When Doves Cry," but there is more: the breadth of Prince's music, and the explosive quality of his performance. The film's most outrageous moments come neither from Prince nor from Apollonia, his arresting-looking co-star, but from The Times' great Morris Day, one of God's natural comedians, in the picture's Cab Calloway role. Singing, dancing, jiving, leering, Day and his buddy Jerome Benton pocket the picture, and it remains for Prince somehow to top himself with a pair of closing numbers to get it back. He manages it, in a closing that even Streisand would have to work to equal on film. What's suprising is how well the movie works even if you're not a Prince fan.



MASSAGE

by Anneke Campbell

TEN YEARS AGO, I found myself suffering from a persistent low backache. A friend suggested I go to a massage therapist. It wouldn't have occurred to me personally to pay a professional to rub my back, but I trusted my friend's opinions, and besides, this was a time for trying new things.

The woman in white who asked me to take off my clothes was in her sixties, strikingly tall and lithe, with the most vivid blue eyes peering out from a mesh of fine wrinkles. In a pronounced German accent she asked me what was the source of my back pain. I wasn't sure, but thought it must be related to carrying around a two-year-old on my hip all day long.

I climbed on the massage table and lay face down. Marion placed one hand on the middle of my back, and a remarkably soft hand it was. Marion used neither oil nor powder; her hands were so soft and relaxed that there was simply no friction between them and the body she was working on. In fact, in the thirty-five years she had been doing massage for a living, she had rubbed the fingerprints off her fingers! Later, when I became apprenticed to her, I used to imagine that those tiny lines of identity had migrated to her face.

Marion eased her hand slowly, gently, using the flat of it, up the muscles on one side of my spine, then up the other side. Her touch cast a spell of comfort and security. I knew Marion would take care of me, would take care of everything. All she actually seemed to be doing was a little pressing and pushing with her one palm, yet that palm spread a heat into my muscles that eased the aching immediately. After ten or fifteen minutes, I was aware of a delicious floating flush of energy, a diffuse pleasure as if spring's first sunshine was flowing through my veins.

Then she found the painful place. Her hand pressed harder over the kidney area. "That hurts," I told her. "I know," she said. She knows, I thought, she has seen through me with her blue X-ray vision, felt through me with her magic fingers. And indeed, Marion's hand traced a thread of pain up my back to a hard, lumpy spot just under my right shoulder-blade, and with her thumb she zeroed in on this unsuspected well of smarting flesh. She eased her other hand under my front ribs so that she was holding that part of my ribcage between her two hands. "You've collapsed in here, that's what creates the strain on your lower back," she told me. I didn't understand what she was talking about, but the pain felt somehow old and familiar.

Marion's fingers kept probing, and my lower back started to ache again. She moved her

Raised in Holland, Anneke Campbell is now a nurse, part-time masseuse, and creative writing teacher in Bloomington, Indiana. She does all with a sure steady hand. — *Kevin Kelly*

PORTRAITS

Illustrations by Kathleen O'Neill

hand away from my front to the kidney area, and held and rocked both hurting places, barely exerting any pressure, just holding. I found myself soothed and drifting once again. I heard her voice as if from a distance. "What did you give up?" she asked me.

Before my mind had time to struggle with the question, an image appeared clear as the day, of a white swan gliding by, moving its long neck in slow grace. The image seemed somehow lodged in my back, and was charged with a despairing sort of emotion. I could feel the muscles alongside my spine clench up tighter, and my eyes stinging with held-back tears. "Follow the feeling through," Marion said, still rocking me with her soft, warm hands. In obedience to her voice, another image thrust itself into my mind's eye, that of a photograph I had treasured in early adolescence, of the great ballerina Anna Pavlova dancing "the Dying Swan."

Then I knew what Marion had been getting at with her question about giving up. Ballet had been the one unadulterated joy in my life until I became convinced, with a little help from my parents, that I had the wrong kind of body, and started too late to become a dancer. Why and how such a loss should be stored in my muscles as images was beyond me, but I wailed for the loss I had been carrying around for years. The muscles in my middle and lower back began to contract and release themselves in twinging spasms, and this reminded me of a physical sensation I had completely forgotten until that moment, which was the strain that used to accompany leglifts in ballet. The spasms decreased in intensity and some of the pain ebbed away with them.

I could feel heat seeping in under my shoulderblade, and Marion's fingers easing further between the blade and my ribcage, further than I would have believed possible. She seemed to be pushing the tight place to its limit, stretching the very tissue. The pain felt good, pleasurable even. Time passed, and I was aware of more and more of my flesh melting against Marion's touch. I was aware also of a sense of wordless but complete connection with myself. I didn't want it ever to stop, I wanted to always feel so soft and at peace with the world.

I floated out of Marion's office at least two inches taller, and convinced that I had met a mother goddess. Not only did I want to devote my life to her, and be the recipient of many more massages, I also wanted to learn to do whatever it was she did. I wanted to be a magician too.

Over the next year and a half, I learned a lot about muscles, voluntary and involuntary, and about fascia and ligaments, tendons and bones. I learned a lot of massage technique. More importantly, Marion taught me that the body aches to be delivered from lies and pretenses and betrayals. I have learned to see the fear that turns to rigidity in the neck, the longing to be held that is denied and immobilized in the shoulders, the unspoken messages that harden the tissues until they can no longer express emotion. What makes a massage memorable to me is when my hands connect a person to him or herself in a new way, or to me, when I get to see who it is behind that wall of flesh.

LARRY

HE'S A SHORT MAN in his twenties, and he takes off his clothes with such vigor, I half expect him to jog around my massage table a couple of times before lying down. He tells me he runs and swims and plays tennis, but recently has been stuck in a plateau of athletic performance. He can't seem to improve. Someone has suggested to him that maybe he's too tense. Do I think that is possible? Can I show him how to relax, so he'll be able to push himself further on the tennis court? I want to laugh, but instead I tell him that we'll have to wait and see. Of such contradictions muscle tension is made.

"How do you want me?"

"On your belly. I'd like to start with your back."

His back is big and broad, nearly the body-builder type, muscles standing out in relief. His skin feels warm. With long, smooth strokes I spread oil and pick up information from the texture of skin and superficial musculature and breathing patterns. No fat here, just layers of well-toned, maybe overly well-toned muscles. This is not the kind of back I like to work on; I prefer a more pliable clay. While I pull on his sides, hoping to create a little slack on the bunched-up erector spinae, Larry talks about his body. His upper body is powerful enough, he says, but sometimes his lower back won't kick in just when he needs it to. He talks about his body as if it were a car that won't shift into a higher gear; he talks and I suggest that he not talk for a bit, close his eyes. He takes my suggestion like an order, shuts both his eyes and mouth tight. I sigh internally, sure I won't be able to do much for this body. I start kneading the latissimus dorsi, which are like cables. The massage table squeaks from my movements, and Larry tells me I should get it oiled. I agree. He says he'd be happy to do it for me. I thank him and say I can manage. I feel a certain exasperation creeping into my hands as they labor away at his deltoids.

The deltoids withstand any invasion of their rock-like nature, so, defeated, I move on to the diamond-shaped trapezius, a flat expanse of muscle that stretches from the top of the neck over the shoulders into a V halfway down the spine. Larry explains what movement his neck will or will not make. I wonder why he is so afraid to let go that he can't stop talking. With my fingers I search the trapezius for knots, and for clues to the nature of his emotional holding on. But the detective in me is thwarted; this body will not yield up its secrets.

I return to larger movements, squeezing the muscle with my cupped palms, smoothing

with flat hands. Larry tells me to go harder. I use as much force as I can muster, but his muscle resists the pressure, remains tight and unyielding. "Don't worry about hurting me," he says, pulling his mouth into a line, "do what you have to." The grimace says it all, "I'm a man and I can stand it." I realize that he has conned me into treating his body in the same aggressive and controlling way he does. I let up on the pressure, and start stroking with my palms, gently, in a slow, nearly waltzing rhythm. I remember Marion telling me that you can't meet force with force, that some bodies have to be coaxed, even tricked into letting go.

"I can barely feel what you're doing," he says.

"That's okay. Focus on your breathing, just relax and follow your breath," I say, to give his mind something to do.

"Anything you say."

I work for a long time on his shoulders and neck, then ask him to turn over so that I can work on his neck and face. I cradle his head in my forearm, and trace the jaw muscles with my fingers. They feel like a rope with knots tied in it. I press the knots with my thumb. "That really hurts," he says, happily it seems. Why is it that we become so immune to subtlety that we crave pain? Or is it that we prefer pain to numbness, to nothing at all? I make soft circles around the rigid place where the jaw muscles insert, around his ears. I look down at his face and notice there's a change in his expression, a hint of insecurity in the lines of the mouth. I hold his neck and lightly stroke the muscles of forehead and temples. Water begins to collect at the corners of his eyes. I allow my hands to become still. I sit holding his head while two large tears roll down his temples and come to rest in his ears.

Shortly, Larry jumps up off the table. "It's over, isn't it?" he asks. "I feel wonderful," he says. He swings his serve-arm to see if the massage has made a difference, and remarks that his arm feels decidedly looser, more flexible. And then he actually jogs a circle around the massage table.

KATIE

SHE HAS SUFFERED from terrible headaches since adolescence, some twenty years now, and nothing helps.

"When one hits, I just have to go to bed for thirty-six hours."

"Is it a migraine?" I ask.

"Not according to the doctors. They think it may be hormone-related," Katie responds with a grimace. "Or else, psychosomatic, you know, their answer to anything they can't figure out."

Katie and I are barely acquainted; we are attending a get-together out in the country, when she feels one of these dread headaches coming on. She thinks she'd better leave. At my suggestion, we have retired to our host's bedroom. I may be able to help with some massage of the neck, I tell her. She strikes me as a very tense, angry sort of person. I'm sure her neck must be tight as a noose.

I would like to prove myself right, but my hands tell me something different. I've rarely felt a neck and back like Katie's. Her muscles are like butter, and I'm not talking about a lack of tone. Her spine resembles a newborn's, not a vertebra out of place, a regular string of pearls. I work for fifteen minutes, then exclaim: "You've got a marvelous back, so loose. And neck too, which is unusual in someone with persistent headaches."

Katie doesn't say a word.

"How are you feeling now?"

"Worse. I simply can't stand it when this happens. I was so looking forward to an afternoon in the country."

"Have you noticed a pattern in their occurrence?"

"No."

I don't know where to go from here. I work gently on the cranial ridge. She whimpers.

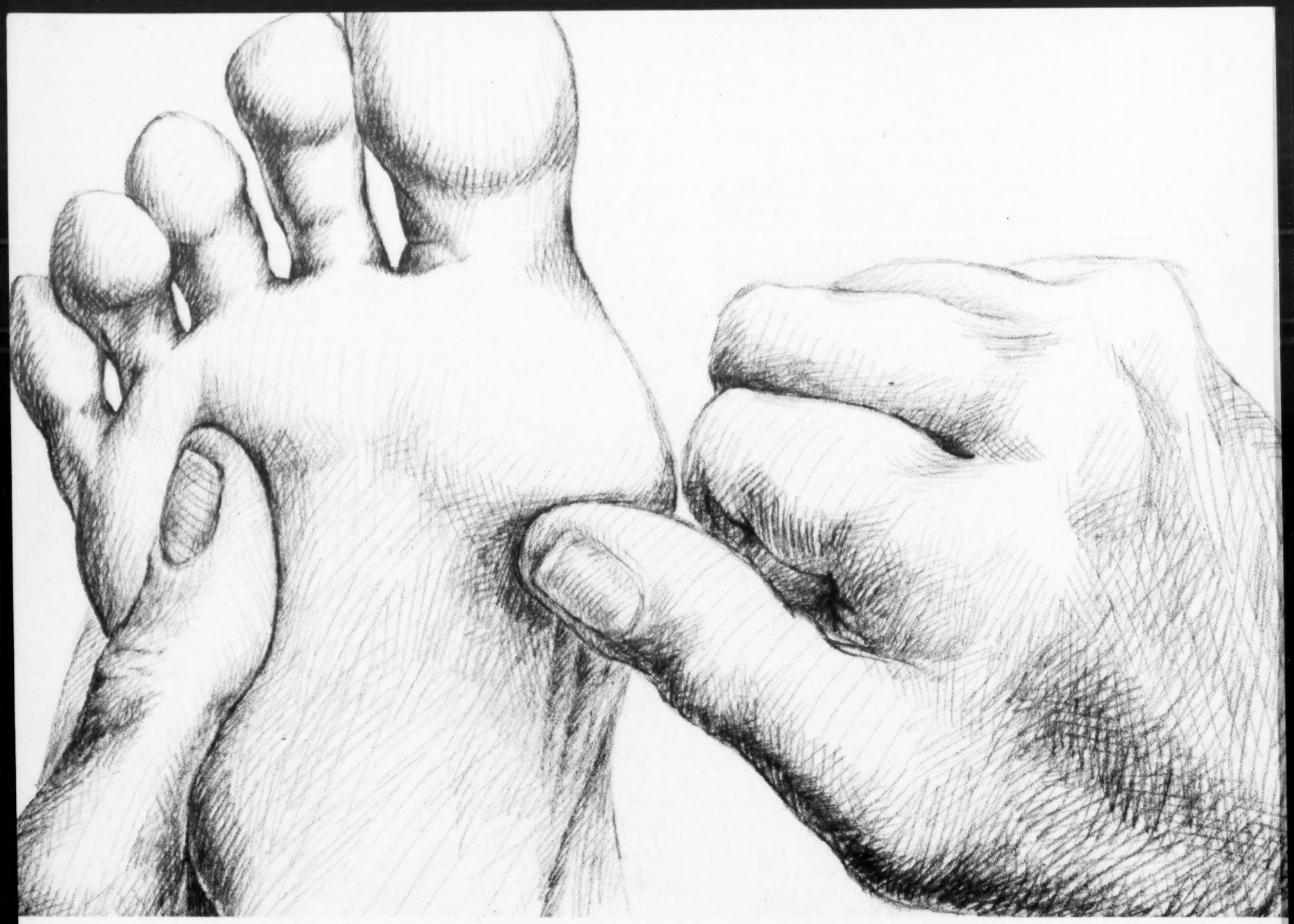
"I just can't stand it," she says. "I don't feel like I'm such a tense, screwed-up person. But damn, this is enough to make me want to kick and scream."

"Have you ever tried that?"

"I've tried everything, believe me. I can't stand it anymore."

"I think I'll work on your feet a bit," I say, suddenly inspired.

I start by rotating her ankle joints. They are stiff, way too stiff for someone her age, and then I know I'm on to something, led on by her tell-tale repetition of the phrase "can't stand it." I squeeze and stroke both feet, and move on to the soles, which are tremendously sensitive. I press with my thumbs into the calloused skin, this unsung but heroic surface which must support our entire body weight all life long. I cover the area bit by bit, concentrating on countless knots of crystallized lactic acid buried in the muscle or connective tissue.



Katie moans, tells me it feels like walking on nails. I press harder still, because I want to dissolve some of these lumps into a more liquid waste product that the lymph system can take away in its ducts.

My fingers follow their path to the toes. Now Katie's foot tries to pull away from the pressure. Her toe joints resist manipulation. I start to pull on her toes, trying to pop the joints. She says she will scream. I think of the people downstairs, and soften my touch. A little "oh!" comes from her.

"What's the matter?"

"My headache, it's much better, I can't believe it," she says.

"It is?" I'm as surprised as she is.

"I mean, it's quite bearable all of a sudden."

"Let me work on your toes some more."

Now Katie has no objection. I grind crystals against the tiny bones, I squeeze and pull and pop the toes, working as hard as I know how for another ten minutes or so. She grits her teeth but makes no sound. When I'm finished, her headache is just a faint shadow of itself.

"How did you do it?" she asks.

"I'm really not sure," I say, feeling impressed with myself and lucky in my inspiration.

"There is a system of massage that concentrates wholly on the feet; it's called zone therapy. I've not taken a course in it, but the idea is that you can affect all parts of the body through working on the feet." I go to wash my hands, making a mental note to buy a book on zone therapy the next chance I get.

Katie and I return downstairs. She says she doesn't know how to thank me. I'm hesitant to ask for my usual fee, since I offered my services without mentioning money at the time, so I just tell her I was glad to help. Later on, I overhear a conversation she is having with a friend of hers. Katie mentions that earlier she thought one of her headaches was coming on. "You poor thing, I know how you suffer," her friend says. "But I guess I was mistaken," Katie continues; "if it had been the real thing, a massage would never have gotten rid of it." I spend the rest of the evening angry with her. I wonder whether she would have placed more value on what happened if I had charged her for it. Or whether my having no explanation for the results made her distrust her own perceptions. It makes me wish I lived in a country like Japan, where massage is accepted as a legitimate healing art, instead of some kind of questionable, or at best, harmless, practice.

CHIP

IT WAS NINE in the evening when the phone rang, and a male voice asked if he could come for a massage.

"How did you find out about me?" I asked, always cautious.

"Connie usually works on me when I'm in town, but she's out for the evening."

I knew Connie did good work, so I relaxed.

"My old football injury is acting up," the man continued, "Could you see me tonight?"

"Well..." I didn't much feel like it, but my rent was due at the end of the week. "Alright then."

"I sure do appreciate it."

The fellow who walked in my door was a massive six-foot-four, dark-haired, jowly. I was going to have to work for my money. Chip had played football at college in the sixties, and nearly gone pro. Partly due to his back problem, he had opted for business, and was doing quite well, if he did say so himself. He also told me he was divorced. He took off all his clothes with bravura, as if to let me know he had no hang-ups about his body, not him.

His back was a sheet of lumpy, tight muscle. I stood close to the massage table and leaned all my weight into my hands. I began by pushing on the bunched-up erector spinae, and to my surprise, they softened up right away. Chip was responsive. I concentrated with my fingers on the vertebrae, which were buried in fibroid connective tissue. While I worked, Chip told me about the injury which had left him with some weakness in the sacral area. He had experienced both numbness and aching in his legs for years.

"There's nothing I can do about nerve impairment, if that's what the problem is," I explained, "but your entire back is a mess, probably due to compensating for the injury. And I can do something about all these tense, bunched-up muscles." I used long, firm strokes down the erector spinae and up the latissimus dorsi. I kneaded the well-padded abdominal obliques and trapezius. I worked so hard that the muscles in my own arms started aching, and drops of sweat ticked at the small of my back.

After about forty minutes, he began to moan. I was feeling pleased with the results of my work; his back was definitely less rigid than when I started.

"Doesn't it feel better?" I asked.

"It does, oh yes, but you're not getting to where most of the pain is."

"Which is?"

"Lower down."

I chased an uncomfortable thought from my mind, and moved my hands down to his sacrum and pelvic brim. I focused on the tiny muscles that lie over the sacrum; they were mushy in texture, a mushiness I associate with damage, and I could see that these could well be the source of his "weakness." Underneath, my fingers discovered some cyst-like formations. Here I worked carefully, but thoroughly.
"Lower," he said.

I ignored the request. Chip's heavy body seemed suddenly disgusting to me.
"Massage my thighs, that's where the problem

is, on the inside of my thighs."

"I've only a few minutes left."

"How about another hour?"

"I don't work two hours in a row," I lied.

I did some long, firm strokes down the length of his legs, trying to ignore the slight grinding of his pelvis into the massage table. I moved up, and took his bullish neck into my hands. Muscle like rock. He needed another hour, that was clear, but he wasn't going to get it from me.

"My masseuse in Florida, she does a full-body massage."

I felt a stab of hatred for the masseuse in Florida.

"Yep, but she's a strong lady," Chip continued, "bigger than you are. You're just a little thing, aren't you. Well, what this lady does, it doesn't take much strength really."

I remained silent, kneading away at his sterno-cleido-mastoids.

"She massages me down there, you know. . ."

"I don't do that kind of massage."

"I'll give you fifty dollars."

"Thank you, but no," I say, clear I would never do such a thing.

"One hundred dollars then."

"I don't do that kind of massage," I repeated, thinking, good Lord, one hundred dollars for a hand-job, he must be filthy rich.

"Please," he said. "One hundred and twenty?"

Half a month's rent, I thought. Is it really that different, rubbing his penis or rubbing his trapezius? What's a little come on my hands? And what difference would it make to anyone but me?

"No," I said, and left the room. As I washed my hands, I noticed they were shaking. I felt a little sick to my stomach, and worried about being along in the house with this huge man. I sat down in an easy chair in the living room. After a while, Chip appeared, fully dressed. He handed me a twenty-dollar bill.

"Thanks," he said, "my back feels a hell of a lot better."

For the the first time in that hour, I looked him fully in the eye. The cringing I saw there took away my fear. He was obviously embarrassed, but more to the point, terribly lonely. I knew what he needed was not sex, but warmth, contact, friendship. I nearly wished I could help him, but I had no desire to be his friend. "I'm glad your back feels better." I said, getting up. I opened the door, and extended my hand. Chip held it between his for a moment. "Good hands," he said.

BARBARA

SHE WAS IN HER LATE TWENTIES, a designer, and lovely to look at, like a fair-haired American Indian, with broad features, a bridged nose, astounding cheekbones. In the last year, Barbara had become involved with a man she liked very much, gotten pregnant, had an abortion because he didn't want to have the child, and ended the relationship. Since the time of her abortion, four months before, her body had not returned to normal. Her menstrual cycle had not resumed, her belly was bloated, and she felt quite depressed.

Problems with the reproductive organs often respond to pressure-point massage of the sacrum, so I placed my hand on the bony ridge of the pelvis. I pressed with my thumb where the vertebrae meld together — hard for six seconds, let up, repeat two more times, move on to the next point, as I remembered from the shiatsu charts I had studied. What was it Oliver Wendell Holmes called the pelvis? "Nature's heavenly arch." I myself saw the bony structure as a basket, as a cradle for a fetus to rock in. Was there such a thing as a pelvis lonely for that burden?

I noticed that Barbara's breathing was shallow. I had her turn over onto her back, and placed my hands on the hollow bony place over her heart, on the sternum. I love the sternum. I love feeling its hardness either in the broad expanse and weaving of ribs that is a man's chest or between the softer weight of women's breasts. Under the right edge of my palm I could feel Barbara's heart beating, and I sensed that my hand wasn't entirely welcome where I had laid it. Barbara's breasts had lost some of their firmness after the abortion, just as happens when you bring a pregnancy full-term, and she had expressed self-consciousness about that when taking off her clothes.

I left my hand on her sternum anyway. I brought my other hand to the side of her ribcage closest to me, and started pressing in with her exhalation, and letting up on the inhalation. At first, her ribs resisted movement, acting like the fixed bars of a cage, but after some minutes, Barbara let out the most heart-rending sigh, and suddenly her ribcage began contracting and expanding like an accordion.

She talked softly, and an occasional tear streaked its way down her temple and nestled

in her yellow hair. "I thought about what he would look like, I just knew it would be a boy. With blond hair like mine, dark-eyed like Hal. I imagined us going for long walks in the woods together, once he learned to walk, of course. I would teach him the names of trees. He would teach me about life."

I suppressed a cynical comment. Life with my child was not so romantic. I realized that it was this vision that was keeping Barbara's body in the past, and not a small clump of cells long ago disintegrated in some hospital garbage disposal. Her mind had convinced her body that she was still pregnant. I suggested that she pretend to hold the baby in her arms, and began working on her pectorals. The pectoral muscles lie over the upper chest; they flex the arms and draw them across the chest; if tight, they pull the shoulders forward. Barbara's pectorals had a wiry, stubborn quality. I squeezed gently, wanting them to loosen their hold on her shoulders, their hold on her imaginary baby. I also placed one hand over the lower belly where the emptiness resided. I left my hand there to generate warmth, barely stroking the soft, slight swell. Barbara cried.

"My breasts feel so ugly," she said. "Your breasts are nice," I said, and moved my other hand from the pectoral down to leave it resting lightly on her left breast.

"They're sagging, and I have nothing to show for it."

"What is it you need," I asked, "to be able to let go?"

"Maybe I need a baby to suck on my breasts."

"That might help, but we don't have a baby."

"I don't have a baby," Barbara whispered.

There was something about her whisper that was different, a finality to it, maybe an acceptance, I wasn't sure. I left my hands where they were, and felt suddenly so sad. I wanted a mother who really wanted me. I wanted to be held by arms that wanted me without complication of contradictory impulses. To be enveloped by a fully welcoming body, ah, well, of such desires are babies made.

Then Barbara giggled. I joined her in a burst of nearly hysterical laughter. We laughed until we were breathless. I didn't know why exactly, didn't question it. The release was wonderful, and mutual. There was that sense of wordless but complete connection.

That night, Barbara called. Her belly was cramping, and some brown blood was coming out of her, similar to the discharge she had had after the abortion. She wanted to know if I thought this was alright.

"Alright?" I said, becoming excited. "That's better than alright, your body is finally healing."

"Just like that?"

"Just like that."

"I guess that pressure-point stuff really works, doesn't it? Or was it letting go of all those feelings?"

"Both, I think. But I'd call it grace."

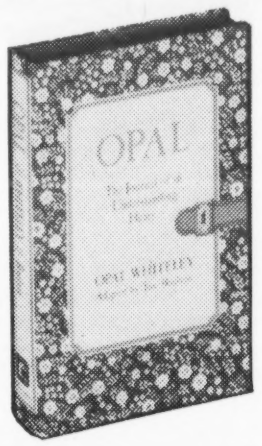
A few weeks later, Barbara had a normal period. ■

Opal

Around the turn of the century a young girl in Oregon kept a diary of her walks in the woods and her conversations with animals. She printed her thoughts on paper bags. In her journals she tells about how she baptized the family pig, or how her pet bat, Aristotle, died of "eating too many mosquitos." She would write poems for big trees.

She was six years old.

Opal was a child prodigy of natural sciences. Her childhood journals have been arranged in verse by Jane Boulton. A strange, rare power, the kind folk art makes, shines inside them. —*Kevin Kelly*



Opal
(The Journal of an Understanding Heart)
Opal Whiteley
Adapted by
Jane Boulton
1984; 190 pp.
$14.95
postpaid from:
William Kaufmann, Inc.
95 First Street
Los Altos, CA 94022
or Whole Earth Access

•

Today the grandpa dug potatoes in the field.
I followed along after.
I picked them up and piled them in piles.
Some of them were very plump.
And all the time I was picking up potatoes
I did have conversations with them.
To some potatoes I did tell about
my hospital in the near woods
and all the little folk in it
and how much prayers and songs
and mentholatum helps them to have well feels.

To other potatoes I did talk about my friends—
how the crow, Lars Porsena,
does have a fondness for collecting things,
how Aphrodite, the mother pig, has a fondness
for chocolate creams,
how my dear pig, Peter Paul Rubens, wears a
little bell coming to my cathedral service.

I have thinks these potatoes growing here
did have knowings of star songs.
I have kept watch in the field at night
and I have seen the stars
look kindness down upon them.
And I have walked between the rows of potatoes
and I have watched
the star gleams on their leaves.

•

I looked long looks at them.
I did have thinks about the tree
they all were before they got chopped up.
I did wonder how I would feel
if I was a very little piece of wood
that got chopped out of a very big tree.

•

I saw the black cat by the barn.
On cold nights I have given that cat
long rubs on its back,
and sparks have come.
I did have thinks about sparky things.
Cats are sparky on cold days.
Rocks are sparky—flint ones—
when you give them a thump.
Stoves are sparky on cold days.
The chore boy says some people are sparky.
He doesn't know what he is talking about.

•

Today we all did go for a walk.
With my right hand I did lead
the girl who has no seeing.
As we did go along we did have listens
to the voices of the trees and grass.
She is learning what the grasses say.
Too, she is learning to see things.
She shuts her eyes when I shut mine.
We go on journeys together.
We ride in a cloud—
in a fleecy white one
that does sail away over the hills.

•

When I was come to the little pond
I lay myself down close to its edge.
There were sky-clouds in the water.
I saw minnows all about.
First they were still.
Then they made moves about.
I saw a little cradle of tiny stones.
It was about an inch long.
While I did look looks at it,
it walked off.

Horse and Buggy with Man and Woman, Evan Decker. Carved, painted and assembled wood, 16¾″×43″×12¼″. Private collection.

Folk Art Finder

Folk Art Finder *is a fine "small" newsletter devoted to folk art — particularly that of the twentieth century. It's a good way to tap into what's happening in the field — the profiles of folk artists introduce creative lesser knowns. You probably won't find 'em in museums. They're a heck of a lot more interesting than that.* —*Marilyn Green*

Folk Art Finder
Florence Laffal, Editor
$9/year
(5 issues) from:
Folk Art Finder
117 North Main Street
Essex, CT 06426

The Other Bible

For my money this is the most significant sourcebook for exploring an alternative Western spirituality since the English translations of the gnostic Nag Hammadi Library were published. The ancient texts presented here — selections from the Dead Sea Scrolls, apocryphal scriptures, kabbalistic and hermetic texts, and some of the Nag Hammadi scriptures themselves — have been previously scattered in at least a dozen books of varying degrees of availability. In collecting these together and writing short introductions for each of the 88 subsections of material, editor Willis Barnstone has made it immeasurably easier to obtain an overview of the diverse spiritual currents at play in the days before orthodox Christianity took hold in the West.

Possession of a mere fraction of the 742 pages of material collected here would have led to burning at the stake during the Inquisition. It is one of the ironic blessings of our secular age that books like this are now freely available in inexpensive, paperback editions.

—Jay Kinney

•

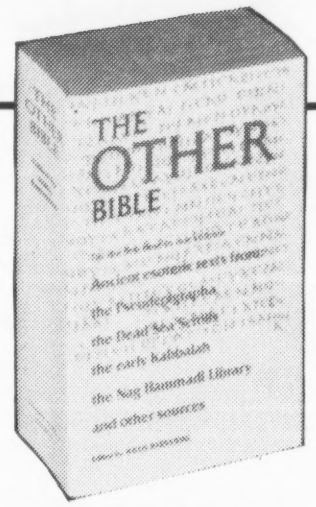
The Gospel of Thomas

These are the secret sayings which the living Jesus spoke and which Didymos Judas Thomas wrote down.
(1) And he said, "Whoever finds the interpretation of these sayings will not experience death."
(2) Jesus said, "Let him who seeks continue seeking until he finds. When he finds, he will become troubled. When he becomes troubled, he will be astonished, and he will rule over the All."
(3) Jesus said, "If those who lead you say to you, 'See, the Kingdom is in the sky,' then the birds of the sky will precede you. If they say to you, 'It is in the sea,' then the fish will precede you. Rather, the Kingdom is inside of you, and it is outside of you. When you come to know yourselves, then you will become known, and you will realize that it is you who are the sons of the living Father. But if you will not know yourselves, you dwell in poverty and it is you who are that poverty."

•

The *Apocryphal Acts* tells fabulous stories of the journeys and deeds of the apostles. An essential feature of this message is sexual continence. This encratite strain reflects the Gnostic's almost furious separation of spirit from body, the latter a dark prison of error. So Peter prefers to keep his own virgin daughter a cripple rather than expose her to the ways of the flesh. He does cure her momentarily, however, to prove that he has the miraculous powers to do so. The ascetic fervor combines with the miraculous to give the *Acts* their special cast. Miracles occur much more frequently than in the New Testament and, to the embarrassment of many commentators, are bizarre and outrageously exaggerated. In a word, the traveling apostles are glorified as miracle-workers in these highly imaginative narrations, which were a form of popular literature and entertainment for the uneducated followers of Christianity. The practical aim was less theological than evangelical. The sheer wonder and excitement of the legends were intended to overwhelm, to convert, and to confirm belief in the powers of the new religion.

The Other Bible
Willis Barnstone, Editor
1984, 742 pp.
$15.87
postpaid from:
Harper & Row
2350 Virginia Avenue
Hagerstown, MD 21740
or Whole Earth Access



Meetings at the Edge

Crises of faith need not be sudden; nor need they be provoked by extreme circumstances. In May 1983, I entered the ***Whole Earth Software Catalog*** *project with an elephant-sized allotment of hubris. I expected to coordinate the project, foresee all emergencies, and satisfy all the staffers and contributors. We emerged with two good publications, but in the process* ***Whole Earth's*** *equilibrium was thrown off balance. Some early tactical short cuts which I'd supported or suggested led into ethical or financial briar patches. I watched a lot of morale drown, I lost at least two close friends, my ego endured some severe bruises, and the preoccupied, manic side of my personality ballooned. When I slowed down in June 1984, I realized that for months I had felt defeated, unworthy, isolated, and hopelessly workaholic.*

Meetings at the Edge *helped bring back perspective. I think it would do the same for many people in emotional crisis. It's not a self-help book; it consists of transcribed conversations with people suffering genuinely harrowing circumstances. Some are unable to decide whether to pull their dying relatives back into life or not. Some are cancer patients. One woman is the mother of a murdered 16-year-old girl. The most poignant conversations are with healers in doubt — nurses, a self-proclaimed "perfect teacher," and a psychologist whose patient committed murder and suicide.*

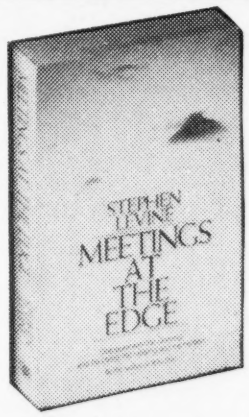
The conversations usually took place over a free consultation phone managed by author Stephen Levine and his wife Ondrea, directors of the Dying Project of the Hanuman Foundation, which was founded by Ram Dass. They're difficult conversations to read; they made me feel squeamish, like illustrated medical guidebooks to disease do. Thus I read the book slowly.

Its power is hard to define. Sometimes the Levines articulate a person's particular problem brilliantly and soulfully; sometimes they articulate it in "New Age" rhetoric; sometimes they can't articulate it at all. The book didn't offer the Levines' advice to others as a solution to my own problems; but it showed me that there is something to strive for spiritually and ethically, which does connect to my sufferings and failings in everyday life, and that I can change — no matter how stuck I feel — if I give myself patience and forgiveness. Many books state this message; if, like me, you have trouble grasping it, ***Meetings at the Edge*** *may help.* *—Art Kleiner*

•

Cassie first called two days before Christmas 1979 to speak to us about the difficulties she was encountering opening to her cancer. "There is a distinct possibility I won't be around to see Christmas 1980. But that's not all of it. It turns out I have a very rare form of cancer that of all things my husband Mark is the world expert on. Of all the cancers I could have gotten, and there are more than a hundred, I had to get this one.

Meetings at the Edge
(Dialogues with the Grieving and the Dying, the Healing and the Healed)
Stephen Levine
1984; 255 pp.
$7.95
postpaid from:
Doubleday and Company/DMO
501 Franklin Avenue
Garden City, NY 11530
or Whole Earth Access



WHO DO YOU THINK YOU ARE?

by Freddy Bosco

You all want something. You Americans. You among the stars. You are all sanpaku.

You are as young as your spine. You are born to victory. You are earnestly requested to meet. You are extraordinary. You are happy. You are my friends.

You are never alone. You are not the target. You are psychic. You are the jury. You are what you eat.

You are younger than you think. You be the judge. You better believe it. You broke my dream.

You can always tell a fisherman. You can always tell a Harvard man. You can analyze handwriting. You can be a better cook than mama ever was. You can be a carpenter. You can be a plumber. You can be a printer.

You can be happily married. You can be healed. You can become the person you want to be.

You can build your own sailboat. You can catch fish. You can change the world. You can change your career. You can communicate with the unseen world.

You can conquer. You can cook for one. You can cope. You can design. You can die laughing.

You can do anything with crepes. You can do it. You can do it from a wheelchair. You can draw cartoons.

You can fight for your life. You can find God. You can find uranium! You can fix it. You can get it right. You can get so much justice.

You can get there from here. You can get what you want if you find it within yourself. You can get your real estate taxes reduced. You can have what you say.

You can help your country win. You can hook rugs. You can improve your vision. You can increase your heart power. You can landscape it yourself. You can learn Russian.

You can learn to fly. You can live cheaply in the Canaries. You can live in an apartment. You can live longer than you think. You can make a bow.

You can make a Stradivarius violin. You can make an insect zoo. You can make money in the stock market. You can make the difference.

You can make your own gloves. You can master life. You can own a business. You can play par golf. You can predict your heart attack and prevent it.

You can prevent illness. You can profit from a monetary crisis. You can quit smoking in 14 days. You can raise decent children. You can remake America. You can say that again, Sam.

You can see a lot standing under a flare in the Republic of Viet Nam. You can sleep well. You can speak again. You can start all over. You can stay well. You can stop.

You can survive any financial disaster. You can survive the outdoors. You can survive the bomb. You can take them with you. You can talk well.

You can teach music. You can train your cat. You can trust the Communists. You can vote.

A string of pearls fished out of the Denver Public Library by Freddy Bosco. It is made up entirely of book titles taken from the card catalog, with minimal editing.

—Kevin Kelly

You can whittle and carve. You can win. You can win a scholarship. You can wreck it. You can write. You can write Chinese.

You can't be an immigrant twice. You can't beat the hours. You can't buy a dog. You can't catch me.

You can't count on dying. You can't do business with Hitler. You can't do that. You can't eat magnolias.

You can't eat peanuts in church. You can't escape. You can't get there from here. You can't go home again. You can't have everything.

You can't have your kayak and heat it. You can't live your own life. You can't make me if I don't want to. You can't pet a possum. You can't print that!

You can't say what you think. You can't steal first base. You can't tell a man by the song he sings. You can't turn the clock back. You can't win.

You come, too. You could live if they let you. You could look it up. You don't have to be rich.

You don't have to exercise. You don't know what you like. You don't need an enemy. You don't say.

You fix them. You fly it. You go away.

You go your way. You got to live. You got to stay happy. You have a friend, Pietro. You have a point there.

You have heard of them. You have to pay the price. You haven't changed.

You know I can't hear you when the water's running. You know me Al. You know what people are. You know who. You learn by living. You live as you breathe.

You look ridiculous. You make America. You make your own luck.

You may cross examine! You may safely graze. You meet them in Mexico. You may as well live. You must break out sometimes.

You must go to Mexico. You must know everything. You must relax. You must see Canada. You mustn't weep, it's Yom Tev.

You need help, Charlie Brown. You need never walk alone. You never can tell. You never know with mama. You no longer count. You only have to get rich once.

You only live twice. You ought to patent that. You ought to see Herbert's house.

You pay and pay. You reach for your hat. You read to me, I'll read to you. You rolling river.

You sell with your voice. You shall be as gods. You shall know them. You should have been here an hour ago. You should have brought your mink.

You should start sooner. You still can't eat Mt. Rainier! You, the jury. You, the person you want to be. You think you got trouble? You, too, are a believer.

You, too, can make a speech. You touched me. You train your dog. You want to build a school? You wear the big shoe.

You were born again to be together. You were princess last time. You will die today! You will go to the moon. You will live under the sea. You will never be the same. You will survive your death. ■

BACKSCATTER

Echoes from readers back to CoEvolution Quarterly

Suspicious worship

It was suspicion that caused my withdrawal from Catholicism at age 14, and suspicion which has prevented me from joining any particular creed since, although I've found much that I liked in every religion I've looked at. But I'm still searching for a religion in which suspicion, skepticism, and questioning are welcomed with open arms. It would seem an essential ingredient when contemplating existence, morality, and all the other heavies. To quote Thomas Jefferson, "Question with boldness even the existence of God; because if there be one, he must more approve of the homage of reason than that of blindfolded fear." Jefferson was accused of atheism for statements such as this.

Suspiciously,
Ben Mates
Moyie Springs, Idaho

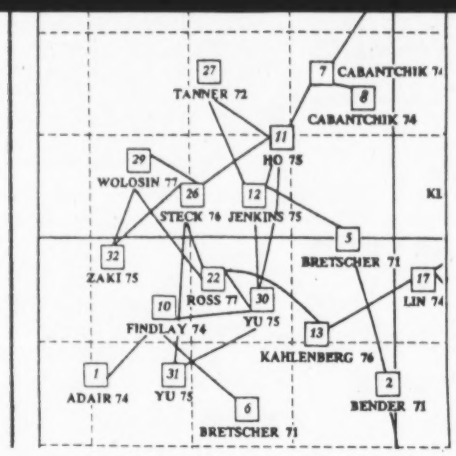
The religion you're looking for is quite popular, quite prosperous, and still growing fast. Science.

—Stewart Brand

Communications disease via computer

In reference to Kevin Kelly's comment (in "Information as a Communicable Disease") that the scientists he knows aren't real bullish on the computer as an information source:

To anyone with a toe in the field of personal computing, it is obvious that the problem is the scientists aren't looking at computers the right way. Case in point: Reprints. The article mentions that the scientists would like to send out free reprints in response to every request, but they have to pay for each one. Why with a personal computer at both ends, and the telephone lines to link up request and author, reprints would cost the author nothing but a little time (which he could use gossipping) and the recipient would decide whether to keep the report, print it out, or just forget it. With the one processor per person principle (I love alliteration), the computer would be the ideal tool to do things exactly the way the author describes, without a need for big libraries or anything, by authors just keeping what they've done handy, and firing it off to those that request it. Fact is, the article describes precisely a system governed by the principles of distributed computer resources, along with some of the problems from not actually having the computer to use as an information communication tool.



Bruce R. McFarling
Granville, Ohio

Science is visualization: some of the best journal information is housed in diagrams, charts, tables, and photographs, which do not telecommunicate well at the moment. When it does, scientific literature will change.

—Kevin Kelly

Farm report

As a resident and member of the Tennessee Farm (which by anyone who lives here or ever has lived here is *never* referred to as "Stephen Gaskin's Farm," but just the Farm), I have been immersed and enmeshed in just about all of this stuff for the last six years here. And Stewart, your bold but compassionate goad for letters from the Farm is appreciated.

It seems to me that whatever sourness existed on the Farm (and certainly there has been a range of feelings from a few people that were so sour that they split mad, spewing bad press wherever they found a microphone, all the way to people who never had any sour feelings at all) has been mostly eradicated by one swift and shattering stroke: *we quit being collective about our daily bread.*

There had always been a steady stream of people coming to the Farm, staying a year or two and then leaving. But, about two years ago, the outgoing stream became a rather large river and our population dropped from about 1300 to about 600 now. All of this produced a number of efforts to figure out what was going wrong, most of which had only vague results as they were directed only at this or that branch of the problem. Finally, many of us, myself included, were dragged unhappily by our new and popularly elected "Board of Directors" over a series of steps which ended, purposely, with the near total cessation of the collectiveness of our means of survival. O woeful day! Our tribe is done for . . . But, lo and behold, miracle of miracles, the other side of the jump seems to be a clear blue sky, and a relatively calm sea, whereas before, no one could doubt that we were sinking fast in a raging storm. And I have heard no one (well, almost no one) complain about the new *cooperative* system since it's been installed. It is Farm II and a different place, for sure, but it was a question of Farm II or no Farm at all. We have lost parts of a dream that many people worked long and hard to make real, but what we have left is precious indeed: a community and a church of friends (not all of whom are members of both); many, many national and international friends and connections with which to continue to influence world consciousness; the opportunity to work on Plenty projects; 1800 acres of woods and streets for our kids to roam in; and our own school, still the largest alternative school in the country. There are still many large problems to work out in this new system and the awfulness of it is that some people may not be able to afford to live here but, even so, there is now more faith and hope in the continuation of the Farm than there has been in a long while.

I want to make clear again that this is a personal statement. I have not discussed the writing of this with anyone outside of my own household. While I am sure that many people here would endorse most of these views, I am equally sure that there are people with different views, feelings, and conclusions, and many of them are at least as valid as mine. The Farm story will never be entirely pinned down. It would take hundreds of hours of direct brain hook-up between all the thousands of people who have lived here to do that and anyway, it ain't over yet!

Thomas Malamed-Durocher
Summertown, Tennessee

"It ain't over yet," but in spite of decollectivization, the exodus has continued. Those remaining are either trying to make good their investment in the land (less owners, more equity) or are saving their money to leave. Economics is only part of the story of the Farm and its collapse as the "flagship of spiritual communities."

—Clifford Figallo
[12-year Farm resident, now employed by the ***Whole Earth Review****]*

Client mind

The subject of religious teachers seducing students still has not been adequately addressed in your pages. Nobody has discussed the general

subject of the client mind to show how patient-doctor relations, student-teacher relations, or even buyer-seller relations put the client in an altered state of consciousness, more open to persuasion than usual.

Remember the last time you bought a car? If you are like me, you went to bed that night feeling pretty good, but you woke up, maybe at 3:00 A.M., wondering what possessed you to buy that particular model with all those extras. Well, it was the salesman who possessed you.

Teachers, doctors, psychologists, attorneys, salespeople all know very well that they possess their students, patients, clients, or customers to some degree. For the true teacher of religion, this is humbling knowledge, and he or she will use the power solely to encourage others to realize their own essential nature.

Maybe the women students were seductive in the cases you cite. Maybe men students would be seductive with a woman teacher. "It takes two to tango," etc. But it is the teacher who occupies the seat of power, and who therefore has the greatest responsibility. It is his job (or her job) to keep a steady eye upon the function of the relationship. If there is no rigor, there is no teaching.

Such a teacher should be able to turn anything the student says or does to show the Way. If the student says to her male teacher, "I find you very attractive," then she has made herself especially vulnerable. What will the teacher's turning words be? This is a precious chance for him to hold up the ancient mirror. For example, he could say, "Why should a Buddha need me?"

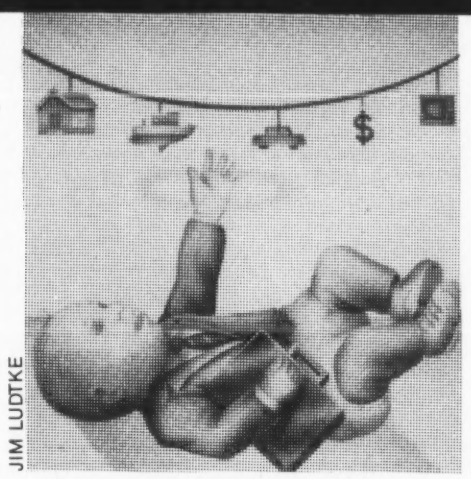
Thanks for listening.

Robert Aitken, Roshi
Diamond Sangha
Honolulu, Hawaii

Clutch and dubious history

Is Professor Colinvaux trying to spoof us all with his article "Towards a Theory of History"? I really cannot make up my mind. Does he really believe that all human history can be understood on the basis of a crude and naive theory about "clutch size"? Or is this paper with its ritual jargon of "testable hypotheses," with its appeals to authority and its grotesque reductionism, a take-off of the worst kind of biologism?

In case it is meant to be taken seriously, may I offer some criticism of



JIM LUDTKE

its foundations? The basic hypothesis is that "human demography results as humans regulate clutch in accord with both perceived niche and available resources." Colinvaux assumes that such rational regulation has obtained at all times and in all places. But the most striking feature of the past two or three thousand years has been the vast expansion of four civilizations that abandoned control over childbirth, even to the extent of declaring such control sinful or illegal. The pro-natalist ethic is still flourishing in the Catholic Church and in Islam, centuries after the limits to the territorial expansion made such attitudes irrational.

Reasoning from his questionable hypothesis, Colinvaux goes on to conclusions that are visibly applicable mainly to modern Westerners. For example "family size should be an inverse function of niche size." On the contrary, Europeans adopted the law of primogeniture to enable large estates to remain intact despite unrestricted breeding; younger sons went into the army or the Church and daughters married as best they could, but the continuity of the family was measured through eldest sons. Islam went even further in enabling the rich to flout Colinvaux's theory; through polygamy and concubinage, the wealthiest men fathered hundreds of sons. It is only with the weakening of primogeniture and the invention of progressive taxation that the rich have been forced to moderate their birth-rate.

By going on to argue that clutch considerations are the cause of technical change, warfare, empire, and so on, Colinvaux falls into the old linear logic that must surely be suspect to readers of **CoEvolution Quarterly**. It might be nearer the truth to argue the reverse: for exampie that the possibility of territorial expansion caused Christians and Muslims to abandon control over clutch size. But surely the best model must be one in which each factor affects the other in a cycle of causation that is tangled up in many other cycles. The fascination of history lies in this vast interplay of coevolving patterns; to see it as anything less is to be blind to history.

Philip Stewart
Oxford, U.K.

Up with Qadhafi

The article on Qadhafi (Spring '84 **CQ**) is, on the whole, excellent, and agrees with my experience working in Libya in '82-83. But one point requires more emphasis: His period in power coincides for almost all Libyans with the time they have benefited from oil and gas revenues. Remember that before oil was struck, Libya was the poorest country on the face of the Earth. And before the revolution, few Libyans had profited. Libya is a long way from being wealthy — no comparison with Dallas-in-the-Desert Gulf sheikdoms — and what they do have is often spoiled by bungling and Third World bureaucracy. But for a lot of people who are not concerned about national dignity after centuries of foreign rule, or the "Third Way," Qhadafi means a car, a portable stereo radio, a TV (even housing which may be a barren slum by our standards), maybe annoying shortages, but no worries about basics. That makes for a fairly solid kind of support, too.

The foreign bases were not "granted" by King Idris so much as taken, since immediately after WWII these powers occupied Libya for a short period, before installing Idris as king (in effect, they had to invent a government for Libya, not wishing to rule it).

Tim Slater
West Germany

Romanticizing Qadhafi

In these past two issues I particularly enjoyed the reprint of the Colinvaux article, "Towards a Theory of History;" the "Elephants" piece by Heathcote Williams and the peculiar thing by Szanto called "The Politics of Martyrdom." This last article was an unusually well-informed note (for something published in the USA) on the complex history-ridden nature of contemporary war between Arabs and Jews. A bit oversimplified nevertheless when he argues that religion has replaced territory as the bone of contention. Actually both religion *and* territory have been contended around here for a hell of a long time. In general, however, most of Szanto's points made good sense and should be paid attention to.

By contrast, the Jessye Piper thing on Qadhafi was, to my mind, highly suspect. Well and good, she's crossed the Sahara two times and lived for a

while (three weeks?) in Algeria. She's done some homework on the article and tries to make an impression of cool, professional detachment. However in her apology for Qadhafi — for that's what it amounts to — she verges on hero-worship and uninformed romantic attraction for the desert Bedu that has afflicted particularly the English but also various other world-weary Westerners for almost a century.

Writing as an Israeli, my mention of Piper's glossing over the real extent of Qadhafi's involvement with the PLO and the real nature of that organization is in itself somewhat suspect. Let me rather emphasize that Qadhafi's involvement in various local brawls all over Africa should not be given such glib treatment as to call it merely "financial aid and moral support to a wide array of revolutionary groups." Surely your readers will recall that it was the North African Arabs, Beduin and non-Beduin, who first enslaved black Africans and later so greatly facilitated their export as slaves to the West, Saudi Arabia, and beyond. Any modern Californian interested in the Beduin as leaders/changers of society should also take a look at the way they treat their women and children.

Keep up the good work, **CQ**! Your publishing efforts are often very good.

James Aronson
Omer, Israel

Cancellation censorship

Censorship takes on many forms and subscription cancellation is but one . . . a subtle one at that. I enjoy the challenge **CQ** generates . . . of reading articles that I may disagree with to obtain a more rounded view and to maybe open myself to new perspectives . . . right or wrong. I am thankful for the challenge **CQ** offers and the freedom to do so. I hope you continue.

If anyone finds **CQ** so untasteful to keep, in the future, they can send the back issues to me . . . postage due and I will be most thankful.

Sincerely,
David Thodal
Box 24, R.R. 1
Troy, Idaho 83871

No interest?

How about an article making a case for rejecting unearned money as an unjust use of power?

Thanks for your work,
Robin Wilson
Spencer, West Virginia

JON LOMBERG

Nuclear Winter — afterthoughts

With world population at 4 to 4½ billion people — how long will they be silent while the ½ billion in the US and Russia "hold them hostage" with over 200 times the lethal dose of nuclear weapons?

Millard Zeisberg
Elkton, Maryland

Gaia flag

I was talking with Tom Morey (who invented the Morey soft boogie board amongst lots of other stuff) about six months ago and he mentioned we should have a "Flag of IZ" — white with a big hole in it so we could look through it and see "what is"! Perhaps the flag for Gaia should have a hole in it too 'cause if we lose perspective on just how wonderful she is — we just may lose her!

Sincerely,
Chomba Love
Holualoa, Hawaii

Mail list pedigree

Wouldn't it be nice if any mailing in the "real world" included a line stating where your name was picked up from? Technologically it would be simple to have the address labels include the extra info (i.e., line 2 would state, "name from Newsweek, etc.").

Danny Burstein
Forest Hills, New York

Of magazines

A few years ago, I had an entrepreneurial inspiration that I did nothing with: why not a Magazine of the Month Club. The subscriber specified an area of interest (politics, poetry, computers . . .) and then received a different magazine in that field every month. I thought it would be a good way to sample lots of titles.

Rodney Hoffman
Los Angeles, California

Behavior Mod on the cheap

Here's a couple of mini-thoughts I'd like to share with you for the mag or the catalogue. They were inspired by the piece on psychosis on pg. 139 of **CQ** No. 30.

A friend of mine decided that one of the evils of human communication was people trying to say what they or someone else should do. So he decided to stop using the word "should." Every day for about three months, he put a handful of quarters in his pocket when he got dressed in the morning. Any time during the day when he used the word "should," he'd give the person he was talking to a quarter. It got very expensive, but it worked. That was several years ago, but I've never caught him using the forbidden word.

I stayed for several months recently with a friend who was annoyed by my male habit of leaving the toilet seat raised after I had used the toilet. As a woman, she never needed to do that, and she found herself sitting awkwardly on the cold porcelain from time to time. She got pretty angry.

I decided that putting down the toilet seat was one thing I could learn to do for women friends, like leaving out a package of tampons for visiting women when I was living alone, that would be easy to learn. I put a small bowl on the back of the toilet, and every time I found the toilet seat up, I knew I did it. So I threw a quarter in the bowl. It cost me $2.25 to break the habit.

The cashiers at a truckstop in Ohio were plagued with a shortage of pennies for making change, so they set up a pennybowl. One day they took a soup bowl and emptied a roll of pennies into it. They put it in front of the cash register with a sign reading, "If you need a penny, take one. If you have a spare, pass it on."

A customer with a bill for $4.78 can take three pennies from the bowl and pocket a quarter's change from a five dollar bill. Or she can get 22 cents back and throw the pennies into the bowl.

According to the waitresses, customers feel sorry for the bowl when it gets low, so they throw in a few extra pennies. It's been going nonstop for over a year on that first 50 pennies. Every once in a while it threatens to overflow, so the cashier takes back a few pennies. They've long since recovered their original 50-cent investment.

Robert W. Shurtleff
San Francisco, California

On the Reality of Evil

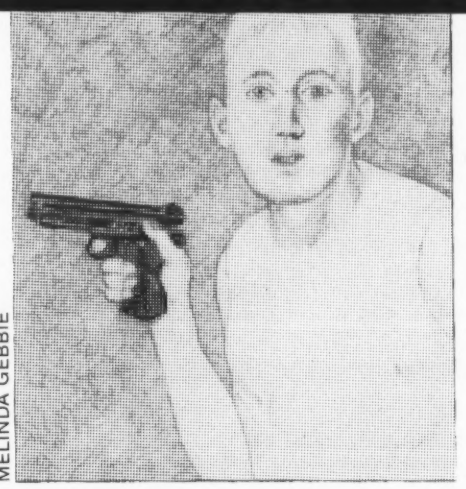
Art Kleiner seemed to be inviting comment on Charles Pappas' thought-

provoking and well-written article "Bad Seeds" (Summer '84 **CQ**) and I've been so moved.

Obviously, when he wrote this, Pappas was hurting and trying to find the handle. The generalizations of behavioral science didn't stretch far enough to cover the specifics of the "senseless" murder of his friend. To fill the gap, he proposed an ancient explanation, the Reality of Evil. If I'd been in his place I might have groped in the same direction. I have had friends who died violently, one by deliberate human action. In that case, elaborate explanations were advanced which seemed acceptable at the time (it was a political act, etc.). So the killing "made sense." Did that mean there was no evil involved in it?

As a by-product of pondering this and other questions raised by the article, it occurred to me that there is a cyclical pattern to such views of human nature. When the country is on an upswing, optimistic, sure of its goals, our hubris leads us to believe that we are in control of imposing the conditions out of which certain behaviors must emerge. Every parent, legislator or counselor a B.F. Skinner, as it were. Environment is destiny, and we can mold the environment. Faulty individuals are traceable to faulty backgrounds. Change the background and you change the person. Anything is possible if we will cooperate to set up the proper social conditions. Liberal Humanism regnant.

The reaction to this — or the ideology to which this is a reaction — could be called Conservative Predestinationism. It emerges when we've been brought down: recession, Viet Nam, whatever. Things haven't worked as we hoped. Those in power have proven incompetent or venal. We begin to feel we've been conned into sacrificing more than our share. It turns out that, as usual, solutions adequate to our recalcitrant problems mandate that we change our ways a good deal more than we are willing to. Articles like this begin to appear. Films featuring innocent-looking but deadly children captivate the mass imagination. It's time to believe in Fate and Inevitability, once again. Our Destiny is in our Stars, or in the incomprehensible hands of God, Nature, or some other rather less benevolent but still supra-human Power. Bad seeds choose to be bad because, well, that's the way they are. Environment has little to do with it, and our only recourse is to kill the deviants or lock 'em up away from the rest of us who, fortunately, were born moral.



MELINDA GEBBIE

If Pappas means to imply by evil some sort of Thing or Force that inscrutably selects human protagonists to do Its will in the world, discussion is fruitless. If this is so, there is nothing we can do about it, which is a relief, I suppose. At least we should practice Christian forgiveness toward those who have been fingered, even as we deal severely with them. Could have been us, after all.

If he has quasi-genetic theories of anti-social behavior in mind ("bad seeds"), involving random mutations or broken chromosomes or susceptibility to chemical imbalance, we can go somewhat further. Such theories have adherents and investigators. Their research has come up with rather indifferent results, so far, but might eventually produce something solid. If it does, we can simply identify the bad seed carriers and experiment with them or, more humanely perhaps, simply lobotomize them and put them to work sorting trash for the rest of their lives.

The Evil-as-Force idea is a matter of faith. I don't think it's true, but it is inherently unprovable. My guess is that the malagenetic theory isn't true, either. I find it difficult to believe that the kids Pappas was involved with, and the man who killed his friend (and Pappas makes me feel their depravity), were born with a gene system for conscienceless sadism, selfishness, theft or murder. Anymore than I was. Or Pappas was.

There *may* be a system predisposing individuals toward, say, impulsiveness, illogicality, short attention span, ultra-sensitivity to certain stimuli, etc., or their opposites. Interacting with the world as he finds it, then, one man becomes a Richard Wagner, another Richard Speck. Seed *and* soil.

Such a Middle Way approach doesn't have the cold thrill of an evil spirit theory, nor the fatuous euphoria of an eliminate-poverty-eliminate-crime program. It calls for continued careful and complex research, which isn't much solace for our grief or reassurance for our fear. On the other hand, it does give us something positive to do, might bring us closer to "the Truth," and avoids the excesses of both ultra-environmentalism and Moral Majority vengefulness.

It isn't new, either. Maybe its chief value lies in the encouragement it gives us to step off the pendulum of philosophical and metaphysical fashion. This won't be easy. Damn thing always has a lot of momentum.

Don MacQueen
San Diego, CA

Evil within us

An individual who is calm and honest enough to gain a measure of detachment from the rampant impulses most of us call "myself" may find him or herself staring at a creature previously undreamed of (or perhaps only dreamed of) living unbidden in the mind.

If I listen carefully to this creature in my mind, I find it muttering such sentiments as, "Gee, I hope Grandma dies in a car crash so I can inherit her money," or, "I want to kill Ralph because he never does the dishes," or wishing variously — and sometimes quite powerfully — to rape, pillage and burn, friend and enemy alike.

In myself, this monster, which is a part of me, is held in check complexly, partly by the loving understanding and power of my higher consciousness, partly by conflicting desires in the subconscious itself.

It is my contention that everyone, however innocent they feel their minds and lives to be, contains a monster: subconscious desire.

Properly understood and channeled, the subconscious is not a monster at all, but most of us have not begun the conscious inner discipline necessary to tame it.

As of member of Amnesty International, working against the death penalty, I have sometimes been struck by the hatred of my civilized Christian neighbors against people on death row.

I have heard persons professing to know Christ discuss the methods of torture they would use on child molesters.

Without judging Mr. Pappas or dismissing his suffering, I would like to ask him if there is a difference in the quality of the impulse which causes a man to murder, and the impulse which causes him to be executed for his crime?

Is there a difference between the impulse which rules the adolescent street punk Pappas deplores as "evil," and the impulse which would have them rounded up and exterminated?

Ted W. Smith
Bellingham, Washington

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CQ EMPLOYEE- Female artist, 37, and small well-behaved sheepdog seek a cottage/studio in the country within one hour's drive of Sausalito where I work part-time. Lived last 3½ years on ranch — helped care for various animals, gardened and assisted building & remodeling. Kathleen O'Neill, 150 Gate 5 Road, Sausalito, CA 94965 - 415/332-4335.

CoEvolution Quarterly
April, May, June 1984

Income	
Subscriptions & Renewals	86,057
Direct Distribution	22,669
Back Issues	229
Mailing List	5,572
Unclassified Ads	1,129
Sale of CQ Library	20,000
Miscellaneous	395
Total Income	**136,051**
Expenses	
Point Corporate	17,236
Lease Purchases	1,002
Freight (Distribution)	1,164
Printing (Magazine)*	51,834
Mailing List	890
Sub. Promo. & Fulfillment	20,786
Writers & Contributors	6,830
Salary — Editorial	9,511
Salary — Research	3,489
Salary — Production	16,731
Salary — Office**	-1,373
Salary — Circulation	6,196
Equip. Rent & Maintenance	3,689
Supplies (Office, Prod., Computer)	2,699
Postage	464
Rent & Bldg. Maintenance	8,359
Telephone	1,722
Utilities	618
Miscellaneous Operating Expenses	2,738
Total Expenses	**154,585**
Profit/Loss	**-18,534**

* Includes print bills for 2 issues
** Reflects expenses reallocated to remodeling of CQ offices.

Point Project Reports:
April, May, June 1984

Whole Earth Software Catalog & Review	
Income	
Software Review Subscriptions	36,264
National Newsstand	32,500
Direct Distribution	6,592
Miscellaneous	892
Total Income	76,248
Expense	359,223
Profit/Loss	-282,975
Uncommon Courtesy	
Income	325
Expense	3,570
Profit/Loss	-3,245
Chronicle Column	
Income	8,045
Expense	4,538
Profit/Loss	3,507
Other Products	
Income	4,899
Expense	28
Profit/Loss	4,871

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CQ and NWEC Update

One nice approach to the problem of information in books slipping out of date has been taken by Bernard Kamoroff for his ***Small-Time Operator*** *(**NWEC** p. 304). Since the book includes the ins and outs of government regulations affecting small businesses, Bernard prepares a one-page Update Sheet available every January. It can be had for $1.00 and a self-addressed stamped No. 10 envelope from Bell Springs Publishing, Box 640, Laytonville, CA 95454. Also from the* ***Catalog*** *(p. 199) is a new address for Rife Hydraulic Engine Manufacturing Company, makers of the Rife Hydraulic Ram non-electrical water pump since 1884. It is: 316 W. Poplar St., P.O. Box 790, Norristown, PA 19401. And the* ***Circle Guide to Wicca and Pagan Resources*** *(**NWEC** p. 589), which we mentioned in the Spring '84* ***CQ*** *(p. 135) had a $10.95 price for a revised edition, has a new address as well: Circle, Box 219, Mt. Horeb, WI 53572.*

Updates for the Summer '84 ***CQ*** *begin with a new price for the spiritual newsletter* ***Body & Soul*** *(p. 67) of $16/yr. for 10 issues, and a new address: 160 E. Virginia, #290, San Jose, CA 95112. The* ***On Foot Through Europe*** *Trail Guides (p. 76) are available from William Morrow, 6 Henderson Dr., West Caldwell, NJ 07006. The Taunton Press's* ***Japanese Woodworking Tools*** *(p. 83) actually costs $22.95 postpaid from: Taunton Press, P.O. Box 355, Newtown, CT 06470. And we listed the wrong publisher's access for the book* ***Architecture and Community*** *(p. 84). The book should be ordered from Penguin Books, 299 Murray Hill Parkway, East Rutherford, NJ 07073.* ***Traveler's Maps*** *(p. 76) a catalog of worldwide maps distributed by Eagle Eye Graphics, suffered a horrible fire in their moving van as they relocated to Colorado. Ten thousand maps and all their records were destroyed, and so* ***Traveler's Maps*** *has been discontinued.*

Popular Communications *(p. 115) has upped its subscription rates to $14/yr. for 12 issues from 76 N. Broadway, Hicksville, NY 11801. We gave a wrong price for sample issues of* ***The Letter Exchange*** *(p. 116). A sample costs $2.50 from P.O. Box 6218, Albany, CA 94706. And a couple of folks wrote to say we misidentified the dulcimer makers pictured along with the reviews of* ***Dulcimer Players News*** *(p. 127). The person we called Lynn McSpadden from Mountain View, Arkansas, is actually Bonnie Carol from Boulder, Colorado. Our apologies to Bonnie and Lynn.*

— Richard Nilsen

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READER SURVEY

Surprise, surprise, surprise.

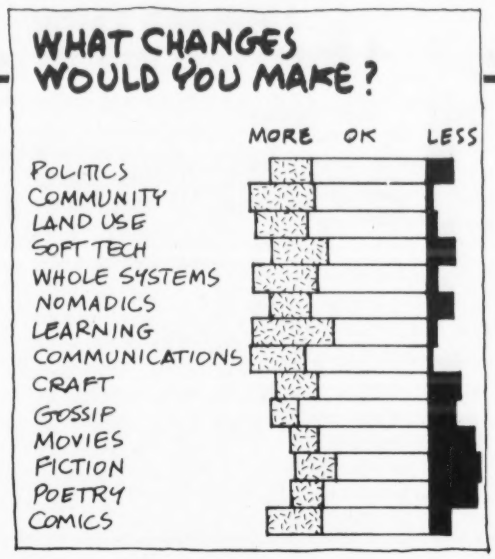
That's what **CQ** readers love us for. Surprise. This note in our reader survey from an unnamed subscriber (woman, aged 31-40, manager of a natural food distributorship) was typical: "The thing I like most about **CQ** is that you always surprise me, *always* turn my thinking upside down at least once an issue." The other 409 respondents echo the same. Some of their additional pointed remarks are excerpted below.

In general, **CQ** readers' interests are too serendipitous to categorize — no surprise. Heading off the top of the list for "other magazines you read" is this unlikely trio: **Mother Jones**, **Organic Gardening**, and **Science 84**. The authors that ranked highest were Paul Hawken, by a mile, Ken Kesey, J. Baldwin, and Anne Herbert. Ivan Illich is also popular, and the most popularly skipped over as well (33 yeas, 27 nays). Other authors that earned jabs as well as salutes were R. Crumb, Sheila Benson (Good Movies), and J. Baldwin.

Replies varied from a few check marks to long, unabashed love letters. And fanaticism. Scott M. Kruse sent in a densely typewritten three-page analysis of every issue since no. 2. In fact, **CQ** readers are uncommonly loyal. Over 30 percent of our respondents have been subscribing for ten years — since the beginning. I suspect that if we asked how many have continuously subscribed since they first mailed a check to **CQ**, the answer would be more like 50 percent.

More Anne Herbert, the replies said. More stuff about the East Coast. More music and comics. More on parenting, families, and kids (look at the median age). And most interestingly, readers wanted more follow-ups on articles or ideas we ran previously.

We are still reading answers. If you'd like to be counted, dig out issue no. 42 and tell us what you think on the tear-out form in the back. —*Kevin Kelly*



I like the fact that this magazine is hard to generalize about.
Industrial salesman

There are other magazines for knee-jerk radicalism; I'd like to see less of it in **CQ**. Similarly, there are other venues for literary expression, so why **CQ**? *Student*

You seem to be involved in provoking thought, not just spreading information. *Mother*

Please *remain* iconoclastic. I can get all the official news/guidelines I want. Even **Federation of American Scientists.** What I want/enjoy from *CoEvQtr* is well reasoned info outside of official establishment circles. For example — suicide articles.
Lawyer

Fine Woodworking is the best-looking magazine I read. **CQ** is the best-feeling. *Engineer*

I read the whole damn thing.
Carpenter, janitor, cook, anarchist

I'm very interested in how your magazine is run — both technically and at the *social* level. I'd like to see articles about this subject, without deleting possible negative stuff — like, is there ever any in-fighting or politics that goes on? I always feel that the gossip column doesn't give anything but the surface picture of you people as a group. I'm very interested in you. *Secretary*

CQ is the most broadening tool available. The figures on #41 business page are a little disturbing (esp. **WESC & R**). I'll become maniacal if necessary!
Clinical psychology grad student

More reviews on books & equipment. Don't forget your heritage!
Anon.

I detect a general drift away from the **Whole Earth Catalog** emphasis on practical skills and tools — which is very important to me — tho the new ideas are important too (Gaia etc.). *Blue collar worker*

I often think S. Brand's idea of Heaven is a room full of people arguing, but at least it ensures that **CQ** is never boring. *Househusband*

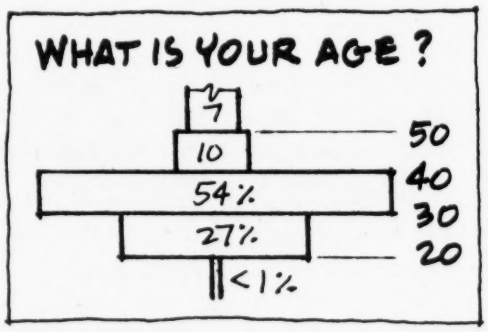
Quirky, enjoyable magazine. Don't always agree. *Long live the metric system!* *Anon.*

The only page worth skipping each month is the table of contents — it's much more fun to just sit back and let each page speak for itself. Even the really bad stuff has some energy of its own. *Library clerk*

Your readers are probably as eclectic as the magazine; you may never be able to "know" who they are.
Systems analyst

Our family is hooked! J. Baldwin is an old friend of my father's, and **CQ** has always been around the house. I started reading it (or at least the cartoons) when I was about 10. Now the family is separated (Saudi Arabia, Rhode Island, Indiana) and each of us has kept a subscription for himself. Preppy Eastern friends often ask me what **CQ** is, and I am always at a loss for a concise answer; what would you say? (I mean after the obvious, "a magazine".) *Student*

My newly-married grad-student son just decided to subscribe to **CQ** — having grown up with it — it's probably his first independent subscription (not a gift). On a grad student's budget, that's a tribute to **CQ**! *Writer*



When I was small, many of my babysitters read and talked about the **Whole Earth Catalog,** which eventually became a staple of my reading. Eventually I learned that it was being reissued, and later that it was still being published in the form of **CQ** . . . Two things I notice bug me a little but not too much. 1) You carry more pictures of naked women than naked men. I don't mind especially, but what is the reason? 2) Reviews by **CQ** staff are usually longer than reviews by other people. I am sure you would not unnecessarily crop anybody's writing, but it would still *look* more honorable to play by your own rules.
Student

You guys ought to lighten up, not so much sturm und drang. You're getting awfully grim.
I make bear rugs for a taxidermist

Popularity of CQ contributors is indicated by height of letters.

Paul Hawken 30%

Ken Kesey 14%

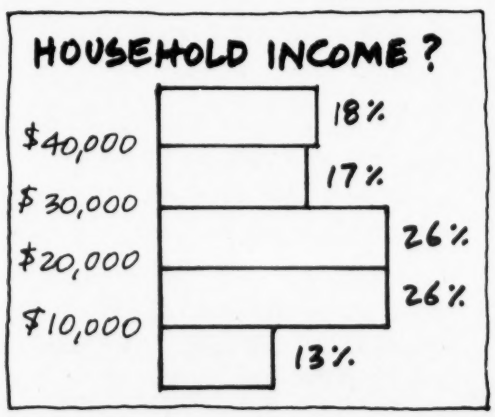
J. Baldwin 11%

Anne Herbert 10%

Szanto 8%
Ivan Illich 8%
Jay Kinney 7%
Wendell Berry 7%
R. Crumb 7%
Gary Snyder 7%
Stewart Brand 6%

Not enough *good* fiction. Your fiction reads too much like your articles — hit you w/ hammer so you don't miss the point. *Writer*

I have a feeling that if **CQ** is doing its job, and has attracted the right readers, few people will find it easy to give a general impression of who they are on the survey. As a for-instance, I do not regularly read any of the magazines you listed in the "What other magazines do you regularly read?" question category. At the same time, I read an awful lot of other magazines . . . Your best articles have tended (as far as I am concerned) to deal with real people doing real things.
Typographer



It was the Pat Califia article on S/M that decided me to subscribe. I opted for "Bold" (Sticks & stones may break my bones, etc. . . .) and lo, behold, etc., all the "good stuff" disappeared! *Facilitator*

CQ with book reviews *only* would be worth the sub. price. They are half the reason I subscribe. I usually read 80% of the reviews.
Software engineer

CQ is completely out of the mainstream of my life and interests — it stretches my mind and feelings in ways that are rarer and rarer at my 55 years — for this reason it's probably the most important journal I read. *Housewife/teacher aide*

You make my solstice. *Boot maker*

It *would* be nice to have a bit of Canadian content once in a while . . . all the better to put North America in context, n'est-ce-pas?
Forester

You used to offer wonderfully simple & elegant solutions. Now you bring me problems.
Small businessman

You are becoming the **Organic Gardening** of the Mind.
Publisher of esoteric records

Big question — I Xerox lots of articles to give to friends where appropriate. They all proclaim to like articles but I only know of one friend who has subscribed. Other friends look at **CEQ** at my house, think it's "neat" and don't subscribe! Why? Is this what you ask, too?
Lawyer

To increase readership, lower your English level to around 10th grade, write articles only about media stars, increase juicy gossip, etc. If you do go this route, cancel my subscription and go to hell.
Electrical engineering student

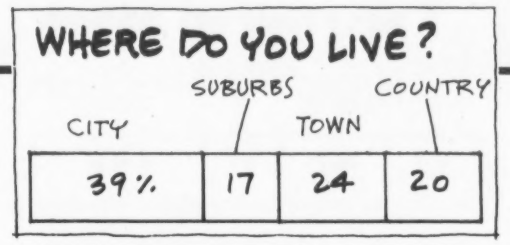
At times I feel that there is a feminist slant in some of your issues. I realize that women have a lot of catching up to do but injustice to men because of their gender should not be ignored. I'm pro-ERA and have two daughters who I hope will have as many opportunities as men but at the same time I've experienced much discrimination because I'm a man, especially in regard to divorce and custody. No one should be discriminated against because of gender, male or female. *Teacher*

Enjoyably inconsistent.
Commercial fisherman

Please do not turn into a literary magazine — the small presses need to be reviewed and people into poetry, etc., need to support them.
Social service worker (presently unemployed)

Definitely, my favorite magazine of all time. I receive **CQ** here on base and I believe some think I'm a subversive.
Electronics Tech. 3rd Class (U.S. Coast Guard)

CQ sustained me through 1½ years in Ft. Lauderdale. *Dance instructor*



What isn't in CQ and ought to be?

Mild male-ism — we're not all feminine exploiters (I'm basically a house-husband, wife's a lawyer).
Photographer/legislative researcher

A little more laughter. *Architect*

Let's have some more suburban survival stuff. We can't all sit in front of our PCs in a log cabin home in the sky. *Geodesist*

More followup, maybe.
University secretary

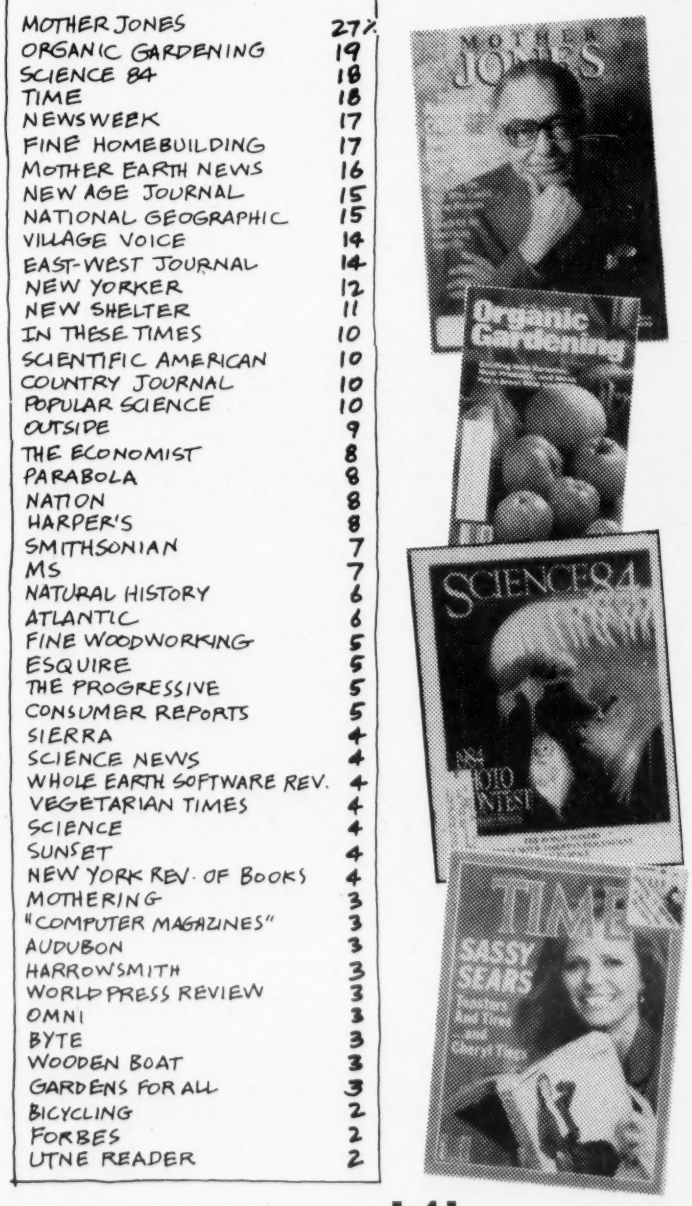
Interview with God. *Janitor*

Black contributors.
Sign language interpreter

Japanese baseball, muskie-fishing tips, Guindon. *Registered nurse*

More intelligent Right-based writing — just for a change.
Small business owner

I don't know. Surprise me. *Anon.*



GOSSIP

The last ***CQ****?*

In present form, yes. For a magazine devoted to "conceptual news," 10 years — 43 issues — with one (abstruse) name and one (book-derived) format is plenty. Time for Spring housecleaning, a roundup and BBQ of sacred cows, and responsibly irresponsible tinkering and meddling — crossing chipmunks and octopuses to see if something with pouches and tentacles might be even handier than a Swiss Army knife. (Never, never, never, say the magazine publishing pundits, give your subscribers misgivings. If you contemplate changes, SNEAK them in and hope that no one notices and cancels in dismay. That's probably true for the likes of institutions like ***Reader's Digest*** *and* ***National Geographic****, but* ***CQ*** *readers thrive on misgivings, right?)*

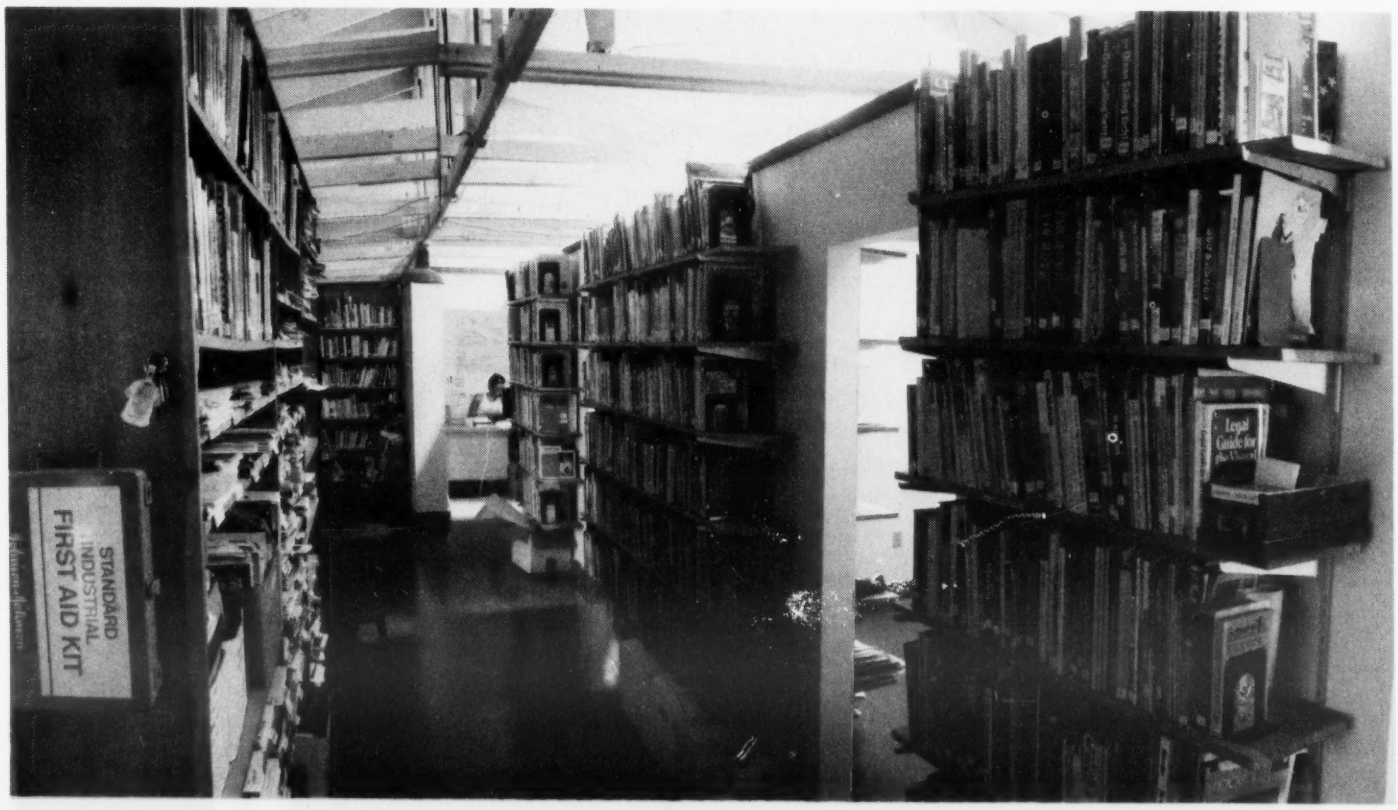
As usual, the decision began with distress. The Point Foundation Board of Directors, doing its job, said that our computer magazine, the quarterly ***Whole Earth Software Review****, was pissing away what's left of the million-buck advance we got from Doubleday for the* ***Whole Earth Software Catalog****. The* ***Review*** *was a good little magazine getting steadily better, but in the ferociously competitive and overpopulated field of computer magazines, it couldn't afford the time and promotion it would take to find its audience and break even (60,000 subscribers required — versus the 9,000 we had).*

Gloom. Financial officer Paul Hawken brooded for a couple weeks and then made the kind of suggestion we retain him for. "Don't kill the ***Software Review****. Blend the best of it into* ***CoEvolution****. Find a new title if need be. Use the money saved to make the new magazine be even better, and promote it properly."*

Amid mixed cries of glee and aghast "Now what!?"s, we took a fresh look at ***CQ****. It feels to us like it's been getting steadily sounder for the last year or so, and subscribers are holding steady around 22,000, but only holding steady. Financially we got it back to breaking even by cutting expenses, but still that leaves nothing to grow and experiment with. Often magazines change in swan-song desperation; change amid general improvement might be the better time. What would a "better still"* ***CQ*** *look, feel, read like? Would our computer enthusiasm and new expertise feel dragged in, or would "computers in context" be closer to what we've been after all along? Personal computers are tools, in wider general use these days than most tools that* ***CQ*** *covers. Computers are still conceptual news, bending the culture in odd and mostly wonderful ways. Why isolate them? (One good reason: people who hate them really hate them — "narcotic little screens and false intelligence" [Joe Kane]. Fine; we'll print what's hateful about computers as well.)*

From all over our offices came critiques and suggestions of what the new publication should try. Reader, please wade in. The metamorphosis will be going on for several issues till it finds a new, stable form. Since the bottom line will be written by you, you might as well write some of the top lines. We're paying unusual attention to your letters and survey forms these days. And stick around. Metamorphosis, like childbirth, may be messy, but it's fascinating. Hybridizing produces short-term grotesqueries, long-term hybrid vigor.

So far the new magazine looks like this. Title: ***Whole Earth Review****. Subtitle: "Tools and Ideas for the Computer Age." It comes*



DON RYAN

Part of the Whole Earth Catalog Library. For rent. See p. 143.

out bimonthly (six times a year) at the same price as each of the merged quarterlies — $18/year (present subscribers to both, about 2,000 of you, will get proportionally extended subs to the new mag). Pages per issue: 104 (624/year versus 576 pages in **CQ** now). About 25-30% to be computer related, but integrated throughout the issue in context of other articles and reviews rather than isolated. Format: same page size and general layout as present **CQ**. Color cover, black & white inside, same as now. Content: "Introduce and evaluate new ideas (tools) that empower the individual as part of a whole system" [Kevin Kelly], plus our customary balancing heresies.

The first **Whole Earth Review** (December 1984) will have more computer material than usual, since it incorporates the "Personal Computers as Poison" issue of **CQ** we've been assembling all year. A witch's brew of yay and boo.

Other schemes in the works: 1) **The Essential Whole Earth Catalog** (a pocketbook-size best-of-the-best, and current); 2) an on-line database **Whole Earth Software Catalog**, current and searchable electronically; 3) an electronic **Whole Earth Software Newsletter**, biweekly; 4) a quarterly microfiche update of the **Whole Earth Software Catalog** (with the new pocket-size fiche-readers — see p. 96 — this could be interesting). Potential publishers/distributors are welcome to the discussion. One with a likely publisher already is 5), a best-of-**CoEvolution** book, probably from North Point Press. Your comments on what should be in it would be helpful.

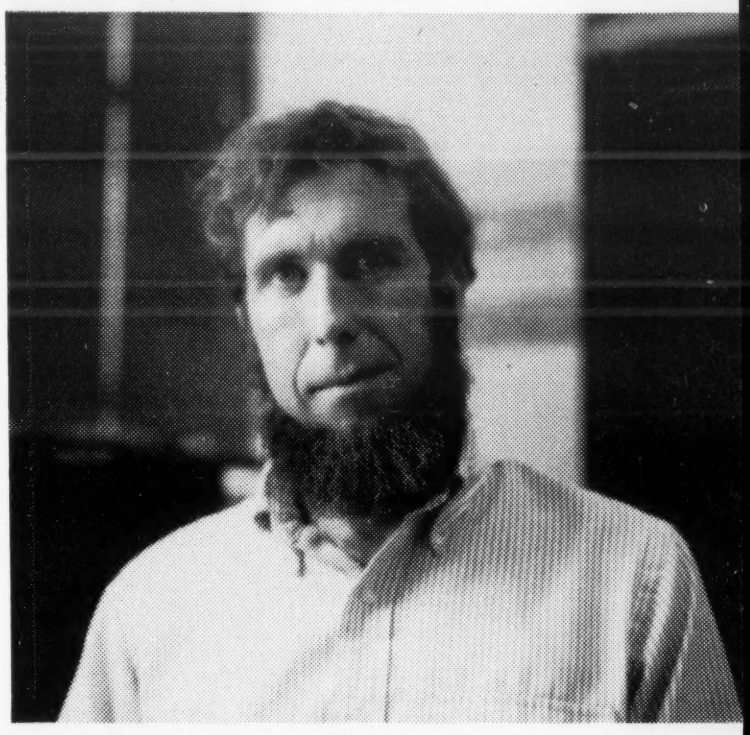
Rent the Whole Earth Library. There is only one absolutely current **Whole Earth Catalog**, complete with everything we've found and loved since the last Catalog production in 1981, and that's our library. Over 5,000 recommended items — 52% books, 17% mail order catalogs, 12% magazines, 9% tools (descriptions), 10% other (no software; that's a different library in a different building, too complex for public access). What if we gave disciplined browsers a one-week Whole Earth Library stack pass for $150? We could handle up to five at a time. There's a comfy reading room looking out on the volleyball court, a copy machine, and a rough but ready kitchen. No books or items leave the premises. If you're interested, contact Andrea Sharp, 415/332-1716.

Now that the **Whole Earth Software Catalog** is done — pridefully done — and the magazines are blending, and the worst crunch is behind us, we're taking long slow summer breaths and looking around for new directions, individually as well as collectively. Close readers of the Unclassifieds (p. 137) will note that Jay Kinney is launching his own magazine on Western esoteric spiritual traditions — a promising endeavor, considering his pioneering effort with the incendiary "Politics and Religion" material in **CQ** the last five issues. Editor of four of those issues, he carried and brightened the **CQ** flame when the winds around here were at their most turbulent in our history. I hope his magazine goes well, but I also hope he's not gone but just on leave of absence.

In other Unclassified news (p. 137), sundry staff are looking for places to dwell near Sausalito, country preferred. Designer Kathleen O'Neill, photographer-cartographer Don Ryan and all-purpose Susan Erkel Ryan, Soft Tech editor J. Baldwin and his botanist companion Liz Fial are all on the scout for low-cost digs. Every one of them would make outstanding tenants, the kind who with their skills and character improve whatever neighborhood they inhabit.

Instant Rookie of the Year around here is Kevin Kelly, your editor this issue, who got off the plane from Athens, Georgia, in June, dove into immediate production

DON RYAN



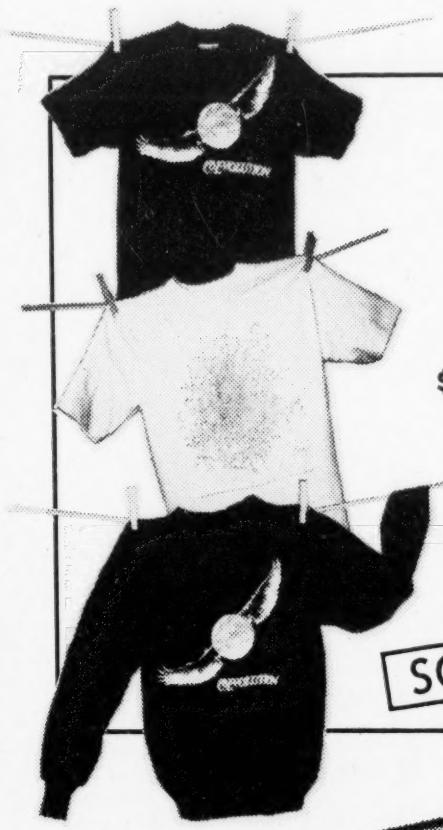
Kevin Kelly

on this volume, and brought it off nicely. He's 32, born a Pennsylvanian, who early on found better things to do than college. From 1972 to 1978 he was on pilgrimage to Asia — Japan, Korea, Philippines, Thailand, Burma, Bangladesh, India, Sri Lanka, Pakistan, Nepal, Afghanistan, Iran, Turkey, and an epiphany in Jerusalem. In 1979 he biked from San Francisco to New York. In 1980 he built a 5,000-square-foot house for a friend. In 1981 he walked the Appalachian Trail from New Jersey to Georgia. "They call it the long green tunnel. Except for my two brothers who were with me, it was pretty boring." In 1982 he was at the University of Georgia Microbiology Department making a film on digestion. The next year he started **Walking Journal** magazine and a mail order business, Nomadics Books, both businesses run entirely from his Apple IIe computer. He is a deacon in the Faith Presbyterian Evangelical Church. "Fundamentalist?" I asked. "Not a comfortable word," he suggested. "Try 'Bible-preaching.'" This longtime beekeeper is now beeless on a Sausalito houseboat. He got his first car last month, an ancient Toyota that cost $25. The only use he's found for it is to get to church on Sundays.

—Stewart Brand

OTHER PRODUCTS

IN FEBRUARY of this year, we passed the fulfillment of the mail orders for "Other Products" to the Whole Earth Access Company in Berkeley. As you know, they also handle the mail order fulfillment of books reviewed in CQ and in the Next Whole Earth Catalog. The products pictured below should now be ordered from them; yes, even CQ T-shirts.



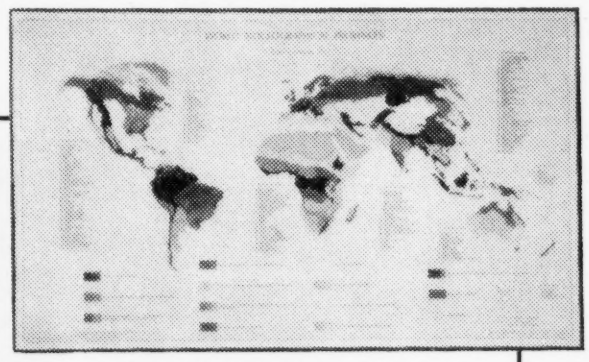
CoEvolution T-shirt
$8 XS (youth's 14-16), S (34-36), M (38-40), L (42-44), XL (46-48)

Bluegenes T-shirt
$10 S (34-36), M (38-40), L (42-44), XL (46-48)

CoEvolution Sweatshirt
$16 S (34-36), M (38-40), L (42-44), XL (46-48)
SOLD OUT

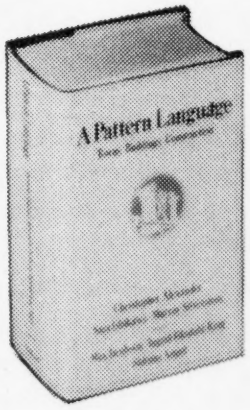
The Next Whole Earth Catalog
2d Edition (1981)
$16

CoEvolution Quarterly Back Issues
$3.50 Each
$10 for 4
Issues 14-26, 28-41

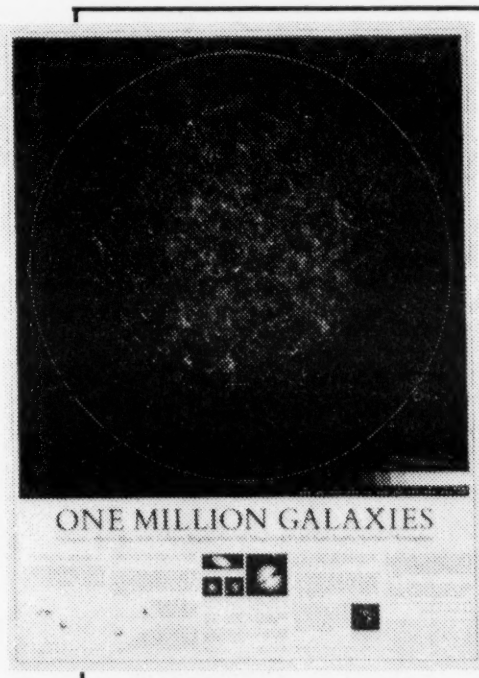


World Biogeographical Provinces Map
$4
22" x 39" (mailed in tube)

Paul Hawken's
The Next Economy
$14.50



A Pattern Language
(Towns, Buildings, Construction)
$45



One Million Galaxies Map
$5 continental U.S.
(elsewhere $7.50)
39" x 47" (mailed in tube)

Devolving Europe Map
$3
11" x 15" full-color
(mailed in tube)

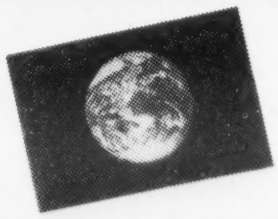
When ordering specify quantity and size (where applicable).

Please include $2 per order for postage and handling.

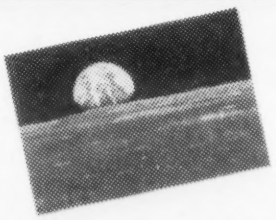
California residents include 6% tax on all orders.

Send all orders to:

WHOLE EARTH ACCESS COMPANY
2990 Seventh Street
Berkeley, CA 94710

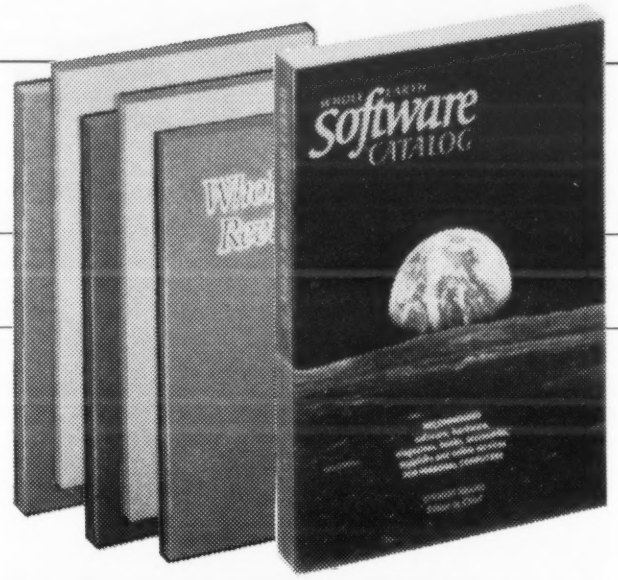


Whole Earth Post Cards
$3.50 package of ten



Earthrise Postcard
$3.50 package of ten

PACKAGE DEAL



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AND
WHOLE EARTH REVIEW

$19.09 postpaid
(over $32.50 value)

The brand new **Whole Earth Software Catalog**, retail $17.50, mailed at our expense. It should reach you before it's in many stores.

plus

5 issues of the new **Whole Earth Review**, value $15. (Can be added to your present subscription.)

The **Whole Earth Software Catalog** is 208 pages, 32 of them color, covering "recommended software, hardware, magazines, books, accessories, suppliers and online services for personal computers" — 450 items reviewed. The publisher is Doubleday; first printing is 200,000 copies.

The **Whole Earth Review** is bimonthly (6 issues/year), 104 pages each issue, **CQ** format. Subtitled "Tools and Ideas for the Computer Age," it is the continuation of **CoEvolution Quarterly** with computer stuff added which will keep the **Whole Earth Software Catalog** up to date through 1985.

The combination may be an apt gift for someone newly immersed in personal computers, or for one contemplating the plunge.

WHOLE EARTH SOFTWARE CATALOG SPECIAL DEAL

$15 postpaid
(over $18.50 value if you paid postage)
The **Whole Earth Software Catalog**, mailed at our expense in September or as soon as you order. Use your phone and credit card if you're in a hurry.

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$18/year (six issues)
Starting in December 1984, this replaces **CoEvolution** as the cutting edge of all our activities. Since the newsstand price is still undetermined, it's too early to say what the dollar saving to subscribers will be. Subscriptions start with the first **WER** or at the end of your present **CQ** and/or **Whole Earth Software Review** subscription.

You can order as many Catalog and Review subscriptions as you like.
Offer expires January 31, 1985. Send order form with check to:

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San Diego, CA 92128

Or, with VISA or MasterCard, call: 800/321-3333 (in California, 800/354-8400).

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Account #_____

Expiration date _____ Signature _____

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Address _____

City _____

State _____ Zip _____

New address

Name _____

Address _____

City _____

State _____ Zip _____

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Old address (put your label here)

Name _____

Address _____

City _____

State _____ Zip _____

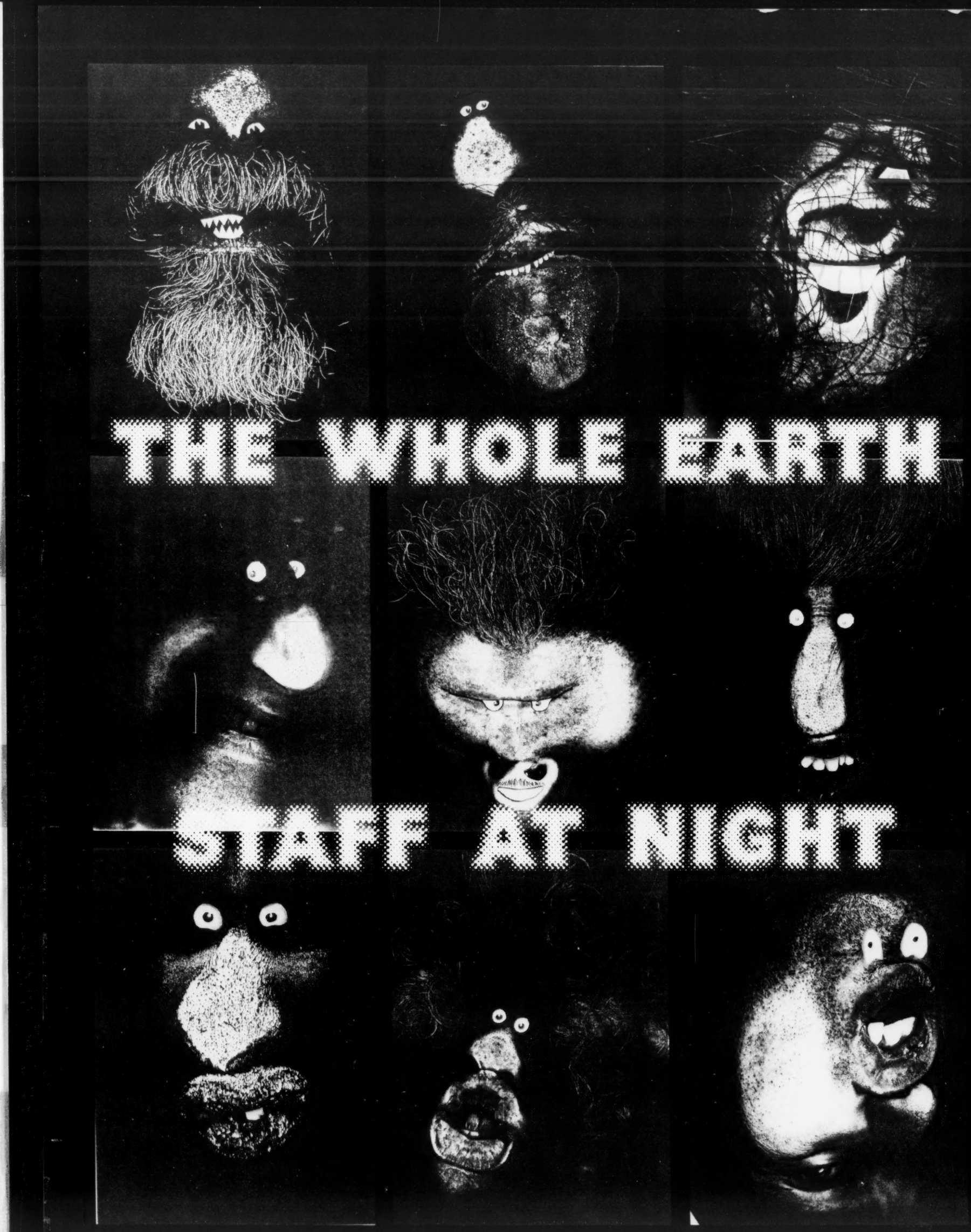
New address

Name _____

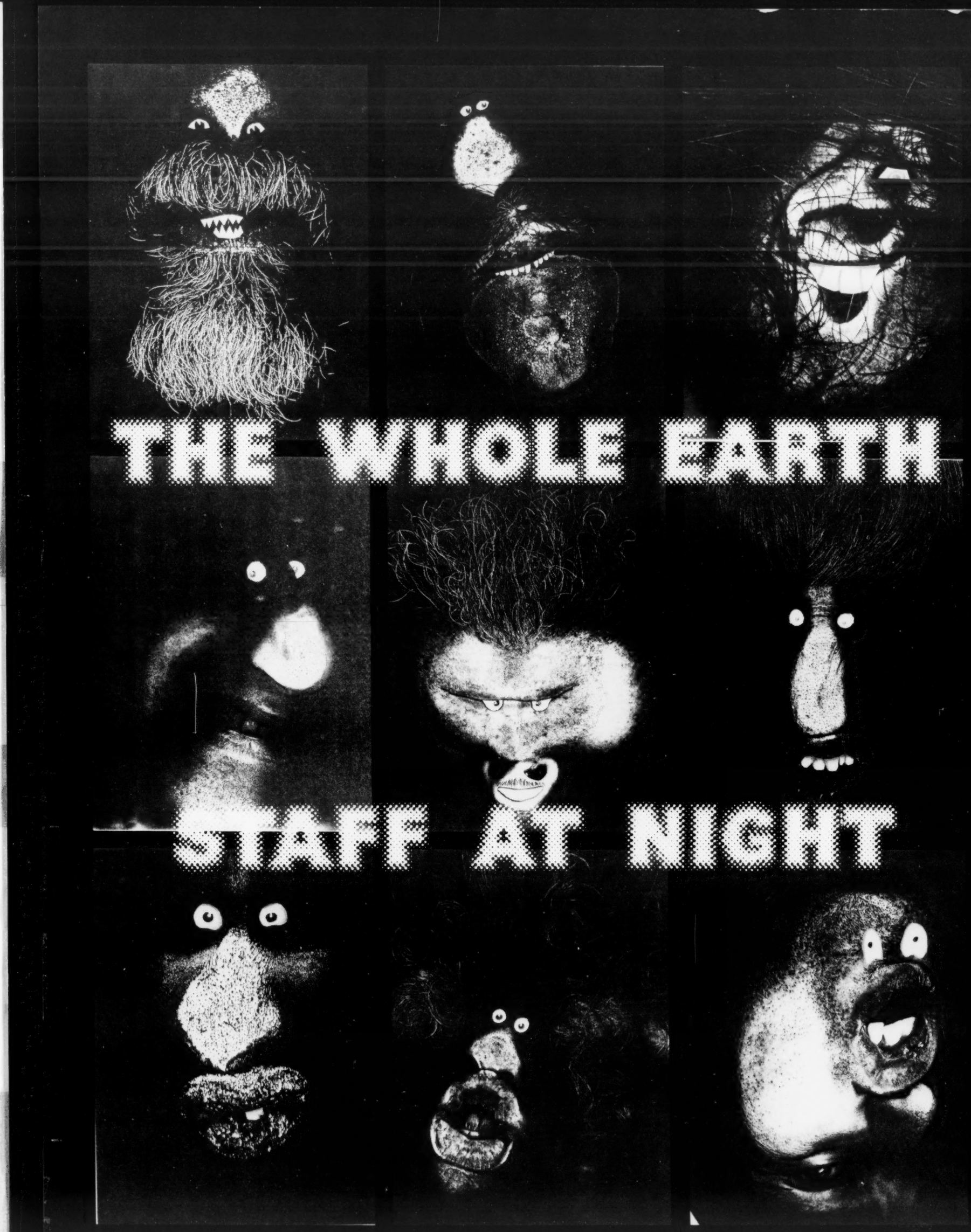
Address _____

City _____

State _____ Zip _____



The stale air of CQ Sub-Basement Eight rings with bestial squeals. Addled staffers eagerly press their faces to the photocopying machine's platen, mash the button, and scuttle off to adorn the vile misshapen images with adhesive-tape eyes, teeth, knobs . . . This lineup includes Don Ryan, James Donnelly, Hank Roberts, Art Kleiner, Kevin Kelly, Anne Herbert, Jim Stockford, Kathleen O'Neill, and Ted Schultz. They'll be punished.



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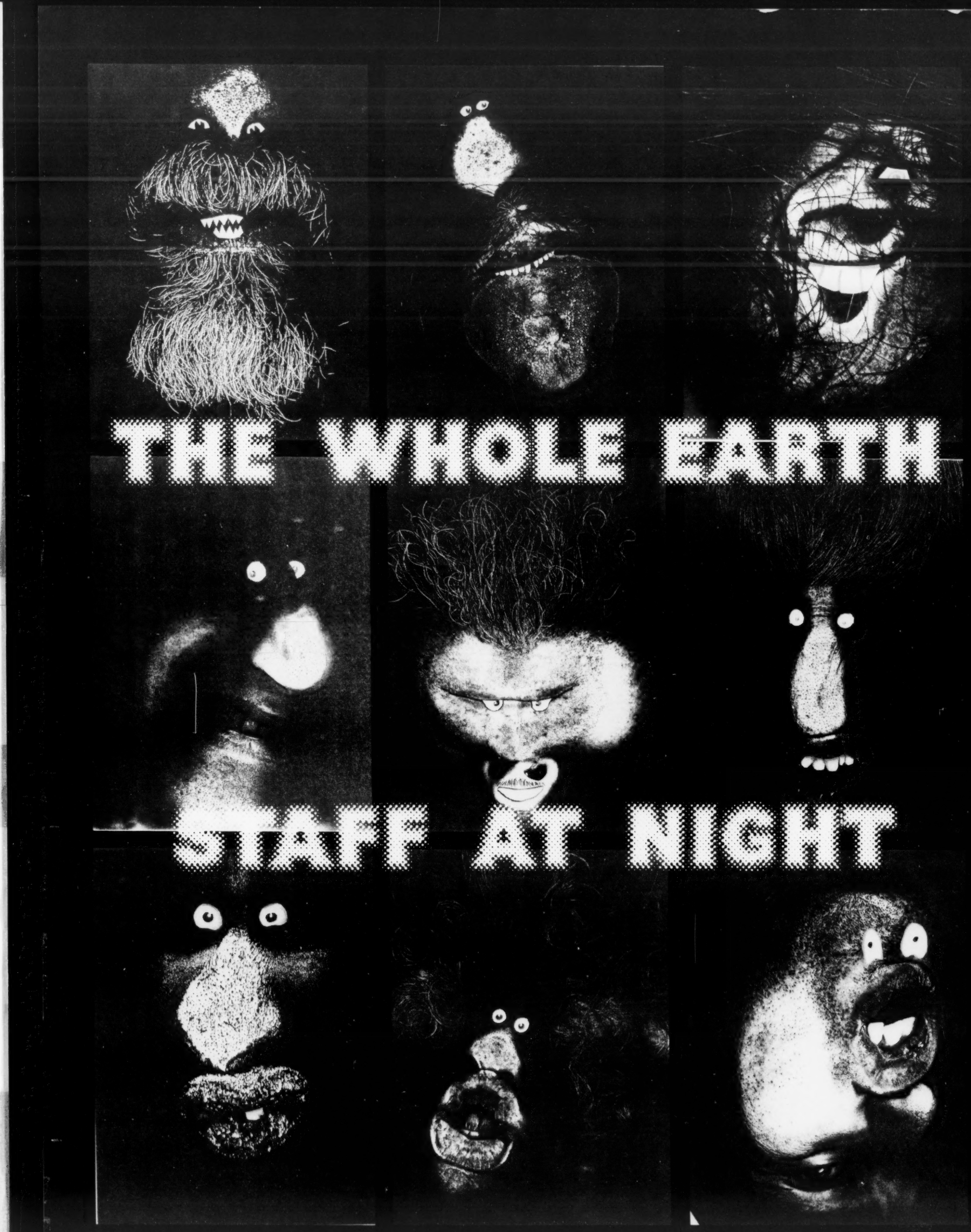

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